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CONTENTS AND SUBJECT INDEX

The Obligations of the Medical Profession: President's Address. E. Starr Judd, M.D., Rochester, Minn. 2007

Erythematous Group of Skin Diseases: Abdominal Pain. I. Ridgeway Trimble, M.D., Baltimore.2010

Studies of Exophthalmic Goiter and the Involuntary Nervous System. Harold Thomas Hyman, M.D., and Leo Kessel, M.D., New York.2014

Studies on Effect of Physical Therapeutic Procedures on Function and Structure. Harold Wolfson, M.D., Chicago 2019

Hemorrhagic Encephalitis After Neoarsphenamine. J. W. Brittingham, M.D., and Thomas Phinizy, M.D., Augusta, Ga. 2021

Climate in Tuberculosis and the Prevention of Relapses. S. Adolphus Knopf, M.D., New York.....2023

Function of the Round Window. Walter Hughson, M.D., and S. J. Crowe, M.D., Baltimore.....2027

Loss of Viricidal Property in Serums from Patients with Herpes and Encephalitis. Frederick P. Gay, M.D., and Margaret Holden, A.M., New York.....2028

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

The Value of Intermittent Traction in Spinal Anesthesia. Donald Guthrie, M.D., Sayre, Pa.....2029

Roentgen Carcinoma and Sarcoma of Man with Report of a Case. Frederick W. Mulsow, M.D., Cedar Rapids, Iowa.....2030

Sarcoma of the Ovary in an Infant Aged Ten Months. Alfred K. Bates, M.D., and George Sincerbeaux, M.D., Auburn, N. Y...2031

COUNCIL ON PHYSICAL THERAPY

Body Mechanics and Posture. R. B. Osgood, M.D., Boston.....2032

COUNCIL ON PHARMACY AND CHEMISTRY 2036

COMMITTEE ON FOODS 2037

EDITORIALS

Loss of Bone Salts in Scurvy..2038

Cookery and Digestibility.....2038

Pneumonia Among Filipinos Traveling in the Steerage.....2039

Ten Miles Above the Earth....2040

CURRENT COMMENT

New Evidence Regarding Reabsorption in the Kidney.....2041

Responses to Muscular Work...2041

(Subject Index on next page)

ASSOCIATION NEWS 2041

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SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "ab," abstract; "E," Editorial; "C," Correspondence; "Ml," Medicolegal; "ME," Medical Economics.

A. M. A. President Judd's address....*2007
Abdomen pain in erythematous skin diseases *2010
section, sequelae of, with infection...ab-2069
Abortion, incidence of syphilis in.....2051
thrombosis and embolism in.....ab-2077
Academy of Medical Sciences in Ferrara..2051
Accident prevention contest.....2045
Amputation, new method.....ab-2075
Anemia, action of liver diet in.....2049
pernicious, amount of blood in.....ab-2074
Anesthesia in surgical obstetrics, etc...ab-2078
fatal explosion while using pencil light..2047
spinal, intermittent traction in.....*2029
Angina, agranulocytic ab-2066
Angina Pectoris, treatment.....ab-2080
Anthrax in man.....ab-2080
Appendix tissues, removed, microscopic examination 2056
Arachnoiditis, chronic local.....ab-2067
Army, U. S., graduate work for reserve officers 2046
Arsphenamine, mixing other drugs with..2057
Arthritis, tuberculous, produce..ab-2066; ab-2067
Association of American Physicians.....2061
Association News 2041
Asthma, cardiac, treatment.....ab-2080
Automobile injuries, one physician in five paid for 2047
Auto-urotherapy ab-2078
Axis, fracture ab-2075

Blood circulation vs. physical therapy....*2019
effects of loss of whole blood.....ab-2068
pressure, low, after burns.....ab-2068
pressure, reduction after trauma.....ab-2068
sedimentation speed and types.....ab-2080
Body mechanics and posture.....*2032
Bone growth, cod liver oil and vitamins in relation to ab-2066
Book Notices 2058
Books Received.....Adv. page 30
British Medical Association and outpatients 2047
medical socialists program 2047
Bureau of Investigation.....2053
Burns, composition of fluid that escapes from blood stream after.....ab-2068
low blood pressure after.....ab-2068

Calcium, absorption, from gallbladder..ab-2066
Cancer, industrial ab-2065
essay, prize for 2046
growth and suprarenal.....ab-2065
growth vs. suprarenal cortex extract..ab-2065
magnesium effect on pathogenesis of..ab-2075
roentgen *2030
Carbon Monoxide poisoning, inhalator for..2057
Cataract, extraction ab-2067
Child health conference.....2043
Children's Fund 2043
Hospital Pediatric Research Foundation..2044
Climate in tuberculosis and prevention of relapses *2023
Colds ab-2063
Colitis, amebic, emetine and treatment..ab-2066
Colorado Congress of Ophthalmology and Otolaryngology 2042
Committee on Foods.....2037
Cookery and digestibility.....E-2038
Correspondence 2054
Council on Medical Education.....2057
Council on Pharmacy and Chemistry.....2036
Council on Physical Therapy.....2032
Cowpox virus, flocculation ab-2066
Cramps, mill, sodium chloride tablets for..2055
Curie, Madame, honored.....2046

Deaths 2052
Dental studies, proposed changes in.....2048
Dentists, increase, Great Britain.....2046
Deutsche pathologische Gesellschaft.....2049
Dextrose, absorption ab-2069
tolerance in infants.....ab-2069
Diabetes, Bang's treatment.....ab-2080
insular, with insulin resistance.....ab-2076
Diastase, clinical determination ab-2080
Diphtheria carriers, prevalence.....ab-2073
death rate in foreigners.....2044
Dystrophy, adiposogenital ab-2080

Eclampsia, osmotherapy and ab-2079
Electrical knife in surgery.....2051
Electrosurgical scalpel in renal surgery..ab-2071
Embolism, fat, after neoarsphenamine..*2021
in women's clinic ab-2077
pulmonary, fatal ab-2077
Empyema thoracis ab-2072
Encephalitis, acute epidemic ab-2080
hemorrhagic, after neoarsphenamine....*2021
loss of viricidal property in serums from.*2028
vaccinal ab-2061
Epilepsy, influence of diet on.....ab-2071
Erythematous skin diseases.....*2010
Erythrocytes, effects of loss of.....ab-2068
Extremity, blood flow in vs. physical therapy *2019
injury, reduction in blood pressure following ab-2068

Food, raw vs. cooked, digestibility.....E-2038
Forehead, brown pigmentation ring in..ab-2080
Foreign Letters 2047
Fractures, thyroid preparations to stimulate ab-2078

Gallbladder, absorption of calcium from.ab-2066
Gastro-Intestinal Tract, functional disorders ab-2071
Glaucoma, early, paracentral field in...ab-2067
new operating procedure in.....ab-2067
Goiter, Exophthalmic, studies.....*2014
simple *2014
Gonococcus, immunological characteristics of substances obtained from.....ab-2063
complement fixation test.....ab-2073
Government Services.....2046

Hands, swelling of 2056
Hay-fever, desensitization in.....2056
Health center, Wilkes-Barre.....2045
Hearing, function of round window.....*2027
Heart disease in relation to pregnancy....2050
Herpes, convalescent serum viricidal property *2028
Hygienic conditions in Rome in 1930....2051

Immunity, tumor ab-2065
Infant, sarcoma of ovary in.....*2031
Infectious Diseases, organ lipases in..ab-2079
Inhalator for gas poisoning.....2057
Insanity: criminal; criteria of.....Ml-2060
Institute of British Psychology.....2048
Insurance, life, among German physicians.2050
International Congress of Radiology.....2051
Intervertebral Disk ab-2068
isolated split in.....ab-2074
Intestine, carcinoid tumors.....ab-2068
Intussusception, recovery ab-2080

Kidney, reabsorption E-2041
surgery, electrosurgical scalpel in.....ab-2071
Kline test for syphilis.....2056

Left-handedness, true, determining.....2051
Leukocytic reaction ab-2067
Liver, cancer, hypoglycemia with coma..ab-2066
Lung, azygos lobe of ab-2069
cancer, aspiration diagnosis.....ab-2065
infections, chronic ab-2063

Malaria dyspepsia in infant.....2051
in the South ab-2066
therapeutic, spleen rupture in.....ab-2077
Malpractice: death following operation; proof of negligence Ml-2060
Marriages 2052
Maxillary Sinus, chronic infections....ab-2072
Medical Profession, obligations.....*2007
Medicolegal 2060
Meetings, Coming Meetings.....2061
Menopause, artificial, use of ovarian preparations in 2056
Mercury poisoning ab-2069
Milk, bacterial standards for.....2043
Mitral stenosis, Graham Steele murmur in. ab-2075
Motion picture projector, hazards in operation of 2055

Nausea of oil well workers.....2056
Neoarsphenamine, hemorrhagic encephalitis after *2021
Nerve, optic, chiasmal syndrome.....ab-2067
Nervous System, autonomic imbalance...*2014
Neurosine poisoning *1225; C-2054
New and Nonofficial Remedies.....2036
News 2042
Noise abatement, 12 points in.....2044
Nurses: privileged communications.....Ml-2061
Nutrition after gastric operations.....ab-2070

Obstetrics, efficiency of antiseptics.....ab-2073
Outpatients, British Medical Association and 2047
Ovary, sarcoma, in infant.....*2031
Oxygen, lack, effect at 10 miles above earth E-2040

Pacific Northwest Medical Association....2045
Pain, peripheral, treatment.....2050
Peptic Ulcer, perforated.....ab-2071
latency of gastroduodenal ulcer.....ab-2075
Peritonitis, rheumatic ab-2066
Phenol poisoning, oil treatment.....ab-2073
Photography, intragastric stereoscopic.....2048
Physicians, increase, Great Britain.....2046
Piccard, Auguste E-2040
Pirquet's tuberculosis reaction.....ab-2080
Pneumococci, type III, specific action of bacterial enzyme on ab-2062
Pneumonia experimentally produced....ab-2061
among Filipinos traveling steerage....E-2039
hemolytic streptococcus ab-2062
Poliomyelitis, free serum for.....2042
Posture and body mechanics.....*2032
Pregnancy as cause of magnesium deficiency ab-2075
Aschheim-Zondek test.....ab-2069; ab-2074
ectopic ab-2072
heart disease in relation to.....2050
incidence of syphilis in.....2051
Privileged Communications: nurses; statute inapplicable to Ml-2061
Pseudosyphilis of external genitalia...ab-2075
Psittacosis ab-2061
Puerperal Fever, mortality, Italy.....2050
Pyelitis, abortion in ab-2078

Queries and Minor Notes.....2055

Radio Program 2041
Radio station, Baker's, ordered off the air.2042
Radium owned by hospitals and physicians.2057
Respiratory Tract, upper, infection, mechanism ab-2062
Rheumatic peritonitis ab-2066
Rickets, cod liver oil and vitamins.....ab-2066
Ringworm of scalp, thallium acetate in..ab-2073
Roentgen Rays dosage and tissue culture.ab-2072
carcinoma and sarcoma in same physician *2030
Round Window, function.....*2027

Sarcoma, roentgen *2030
Rous, biochemical studies.....ab-2065
Scammon, Richard E.....2043
Scurvy, loss of bone salts in.....E-2038
Skin diseases, abdominal pain.....*2010
Smallpox virus flocculation experiments..ab-2066
Socialist Medical Association.....2047
Society Proceedings.....2061
Spallanzani, Lazzaro, publication of works.2051
Spinal Cord, degenerative transverse myelitis ab-2075
Spirochaeta pallida, cultivation for immunization ab-2076
Spleen, rupture, spontaneous.....ab-2077
Splenomegaly, some aspects ab-2073
State Board Examinations.....2057
Stomach, intragastric stereoscopic photography 2048
surgery, nutrition after.....ab-2070
Students, medical, tuberculosis in.....ab-2063
Suprarenal and tumor growth.....ab-2065
cortex, aqueous extract ab-2065
Surgery, pallor and hyperthermia after, in children ab-2075
Swimming pool, use of copper sulphate in.2056
Syphilis, hemorrhagic encephalitis after neoarsphenamine *2021
unilateral palmar ab-2080
unsuspected, incidence, Australia.....2051

Tendon sheaths, lipoma ab-2074
Thrombosis in women's clinic.....ab-2077
thyroxin prevents ab-2077
Thyroid, atrophy and fibrosis with lymphoid tissue in ab-2068
Thyroidectomy, laryngeal nerves in....ab-2071
Tissues, growth vs. pathology.....2049
water content after trauma and hemorrhage ab-2069
Tonics and Sedatives.....Adv. page 24
Trachoma, bacterium granulosis in....ab-2067
Tubercle Bacilli, cultivation.....ab-2080
Tuberculosis, climate in, and prevention of relapses *2023
average decrease 2045
congenital, case ab-2080
in medical students ab-2063
pulmonary, in medical students.....ab-2063
treatment, diet ab-2079
Tufts College, preventive medicine department establismhed at.....2043
Tumor growth and suprarenals.....ab-2065
clinic established 2045
immunity ab-2065
Typhoid among wedding guests.....2044

Uremia due to sodium chloride deficiency. ab-2079
Urine, reaction vs. bacterial content...ab-2078
sugar, purple in Haines test.....2057
therapeutic use ab-2078
vesico-ureteral backflow ab-2075
Uterus, basal metabolism in fibromyomas.ab-2077
cancer, cervical, prevention C-2054
diagnosis of hydatid mole.....ab-2076

Vulva, acute ulcer ab-2079

Welch Memorial Library, Jacobs room.....2042
Work, muscular, responses to.....E-2041
Workmen's Compensation Acts: poisoning, mercurial Ml-2060

Yellow Fever, vaccination 2048

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THE OBLIGATIONS OF THE MEDICAL PROFESSION

PRESIDENT'S ADDRESS *

E. STARR JUDD, M.D.

ROCHESTER, MINN.

To most of us the American Medical Association is an established part of the medical world. Few of us can realize the industry and effort that have been put forth by the members of the profession to bring it to its present state of organization.

We all know too well the ever increasing number of important problems with which we are confronted. The solution of these problems will be made much easier if we will look back into the old transactions and be made to realize the difficulties that have already been overcome and see what has been accomplished.

The present state of development has resulted from the plan for organization of the American Medical Association which was presented to a national convention of delegates. This group met in New York in May, 1846, and made plans for the second national convention, which was composed of 250 delegates to meet in Philadelphia, May 5, 1847. This convention resolved itself into the first session of the American Medical Association.

Through the adoption of reports of committees and the making of resolutions, an organization was completed that was to exist for nearly half a century. At the end of that time, a reorganization was brought about in order to make the association more democratic and in order that the component societies would each have its proper representation in the House of Delegates, which was established at that time.

It is essential that the activities of the medical profession be carried on through an organization which, among other things, affords a link between the profession and the public for their mutual benefit. Organized medicine must acknowledge these obligations.

PUBLIC RELATIONS

There was a time not long ago when the physician, in talking with his patient or with the relatives of his patient, would use medical terms almost exclusively. He seemed especially happy if he could employ Latin expressions. It may have been natural for him to do this, for he was following his teachings, and furthermore he probably liked to do it since to him it seemed to indicate great wisdom. Instead of accomplishing his object of impressing others with his wisdom, however, I think it increased the uncertainty and mystery concerning medicine in the minds of the individual patients.

One reason that charlatans and irregular practitioners are able to continue in their practices is that there is still so much uncertainty and mystery about disease. We cannot hope to be rid of this sort of thing until all of the mystery is cleared up. We can help society a great deal, however, by utilizing every effort at our command to educate people along medical lines. The idea of medical education for the public is not a new one, but the importance of it is more fully realized now than it was in former years. Every physician can do his part in this work in his daily visits and contacts with his patients. It seems to me that if this personal contact with our patients is not carried out in an interesting, enthusiastic and educational manner, we are not fulfilling our professional obligations.

I believe that it would not be out of place to establish departments in medical schools for the purpose of giving courses that would teach common sense methods in the practice of the art of medicine. The tremendously interesting and important developments in the science of medicine are overshadowing the art of medicine. Very rapidly medicine is becoming a more exact science. The knowledge obtained from our scientific studies and investigations will be wasted and of no avail unless it is taken directly to the patient by one who is interested in the practice of the art of applying this information. Too often those who are making the scientific investigations are content with the results of their studies, and the application must be made by some one else.

METHODS OF GIVING FACTS TO THE PUBLIC

There are many ways in which information concerning medical facts may be given to the public that are certain to be helpful in establishing a more confident and intimate relationship between the public and the profession.

Public health and other medical lectures sponsored by county medical societies should be one of the important obligations of the county society. These lectures may be abstracted and published in the daily press. Under the supervision of the secretary or other officer or committee of the medical society, all medical news at his command should be made available to the press. The press has shown itself willing and anxious to publish this information and to cooperate with the profession in every way.

The radio as a means of disseminating medical news and information in which the public is interested, and about which it should know, is being employed extensively, and undoubtedly it will be used more. Properly regulated and controlled by medical societies and their officers, this plan of giving out medical facts is certain to lead to results of great value. Those who control the radio corporations are overwhelmed with applications for time on their programs to broadcast quack remedies and cures, and they are anxious to know what

* President's address before the American Medical Association at the Eighty-Second Annual Session, Philadelphia, June 9, 1931.

should be accepted and what should not. It is one of the obligations of the medical profession to give them this information.

The consensus among members of the medical profession generally is that some sort of publicity should be supplied by which the public will be made to understand the nature, the purposes and the results of the efforts made by scientific medicine for prevention and control of disease.

Organized medicine must keep its relationship properly adjusted to advancing social conditions and go with the force of public opinion (Ross).

The profession of medicine is under obligation to protect the public from unsound programs as much as to see that it is informed on the proper principles. A committee on public relations composed of members who have made studies of these problems, and who appreciate the obligations of the profession to the public, is a valuable part of a state organization.

The organization of all medical activities in each state, so that the public health association, state medical association, and all other associations and auxiliaries are under the one head helps greatly to coordinate all medical activities. This scheme brings the medical profession as a whole into the leadership of all activities pertaining to medicine within the state. It is not only the privilege of the profession to assume this leadership, but it is also its solemn obligation to direct all medical activities.

Society must be made to realize that organized medicine is perfectly able to control and operate its affairs without the help of the government or other outside organizations and that it can do so to the advantage of every one concerned.

INDIVIDUAL RELATIONSHIPS

The individual relationship of the physician and the patient is now and always will be the crux of medical practice. The fact that several plans for public relations have been worked out and put into operation shows that the profession is aware of the social and industrial changes that are taking place, and that it is making the necessary changes and fulfilling its obligations. With all of this development, however, unless the intimate personal relationship between physician and patient is maintained it will not be possible to obtain for the patient the kind of service that the majority of American citizens are entitled to and will demand. No plan yet suggested seems to fit all communities, for the problems vary in different places. One thing I am certain of, however, is that whether caring for the sick is done by private practice, group practice, clinics or guilds, it must be continued on a personal basis.

Routine procedures, with established compensation and reward, would not only destroy all enthusiasm for the development of the art of the practice of medicine but would also take away all stimulation and initiative for investigation and research.

MEDICAL EDUCATION

The American Medical Association was organized largely for the purpose of advancing premedical and medical education. At the time of its organization the requirements of medical training were insignificant and those who operated the medical schools derived financial returns according to the number of students in the school. In some instances, therefore, everything possible was done to make it easy for the students to enter and pass through the school. On the other hand, practitioners did not want any more competition than they were obliged to have, so they opposed the easy plan for admission to the schools and the easier way of completing the courses. Medical education became entirely different after the formation of the American Medical Association, and particularly after the Council on Medical Education and Hospitals was established. This body has brought both premedical and medical education to a standard by which they are recognized throughout the world. Like many other good ideas, when they once get a start it is difficult to control them, and the question now arises as to whether the requirements are not too rigid, and the time required for completion of a medical course is not too long. All are agreed that it is not possible to have too much training for this work, but some feel that the medical school courses are too long and too elaborate. One point is certain, and that is that most of those who spend many years in preparation for the practice of medicine will not be content to go into general practice and from there work up in the profession. They have been taught the practice of medicine with all the most modern devices and equipment and are lost without them. Not all of these requirements are essential, and many students will become better physicians if they are obliged to carry out examination and practice according to their natural senses.

The trend of medical education is toward scientific medicine and specialization, and not so much time is given to the art of the practice. The achievements of scientific medicine within the last few years are not realized by many. Certain diseases have been brought under complete control, and some will probably be eradicated in a short time. Through the efforts of science, knowledge is being accumulated concerning the cause and the course of disease, and this makes better treatment possible. Better treatment will come as our knowledge of the fundamentals is increased, so that no one with a sound conscience can belittle the time and effort that is put into the study of scientific medicine. Not all medical students are scientists, and few real scientists are good practitioners of medicine; so the best results are obtained by a close association between the two. A practitioner of the art of medicine should not do things in a purely routine manner but should be on the lookout for better methods. If he studies his cases individually and in groups, his research in this way may add valuable information to our knowledge. Not only that, but studies of this kind take away the drudgery of routine practice and add stimulation and pleasure to work. On the other hand, in order that the most may be derived from scientific studies, every one who devotes his time to this work should welcome the opportunity to pass this information on directly for the benefit of other patients. In order to do this, he must carry on a practice himself or must be closely associated with some one who does.

Too often research and experimental work are carried on exclusively in laboratories or in isolated places. The best type of research may often be done by thoughtful, studious physicians in their everyday work.

SPECIALIZATION

Specialization implies special and expert knowledge in a certain field of medicine. It is at once evident that no one person can have sufficient knowledge of all disease conditions to be able to carry out treatment satisfactorily, so it is advisable to specialize in our work to some extent. The idea of specializing in many small fields has been greatly abused, but this has been due largely to the demand for specialists made by the public.

Just because one says he is a specialist does not mean that he has special knowledge in his field, and for this reason several of the scientific sections of the American Medical Association, together with special societies, have worked out plans whereby one who wants to practice a specialty can take an examination after he has had special training. If he is successful in the examination he will be granted a certificate which will show that he is qualified to be classified as a specialist in this field. This plan is an attempt to protect the people against so-called specialists who have not had special training. There should be some way for the patient and the public to know who are especially qualified and who are not. Publicity given to this plan should be helpful.

Specialization in certain fields of medicine and surgery is essential in order to obtain the best results. This has been greatly overdone and has been the cause of much criticism. A physician is not qualified to take up special work until he has spent some time in general practice. Specialization does give an opportunity to concentrate on one particular line of work, and industry and experience bring special knowledge and skill in this work.

It has been said that this plan of specialization has greatly increased the cost of medical attention. If this is so, although it is doubtful that it is so, the result may be attributed directly to the demands of the public. These demands would not be made if the public could be kept well informed on these matters.

That the practice of medicine is changing is evident to everyone. Specialists dominate practice in certain localities, and the public is becoming convinced that the hospital supplies the most adequate plan for the treatment of human ills.

We are living in a transition period, and new methods of medical service are being created. Some plan must be devised whereby the family physician will remain the foundation of medical service, for his knowledge of the patient and his surroundings and his experience in such intimate and personal contact with patients makes him better qualified not only to diagnose and treat but also to direct the management of the case. His obligation is a serious one. No position in our social make-up requires a person of character and industry and deep appreciation of his moral responsibility more than does that of the general practitioner of medicine. With these attributes he has been a great success and will continue to be for a long time to come.

The changing character of medical practice has broadened the scope of the usefulness of medical practitioners, who at once become leaders in their communities in all public health work.

The White House Conference called by President Hoover during the last year will have a far-reaching influence and, as time passes, is certain to have a profound effect on the physical characteristics of the people of this country. It is not unlikely that this movement in the interest of child welfare may help to solve the problem of the cause and character of many chronic illnesses which the profession up to this time has not been able to understand.

PHILOSOPHY IN MEDICINE

It is a common and prevalent opinion that present-day philosophy and medicine have nothing to do with each other.

Philosophy is a general knowledge and idea of the nature and relation of things, and it is said that there is a pleasure in philosophy which every student feels until the necessities of physical existence drag him into the life of economic strife and gain. Philosophers want to pull themselves out of the daily routine and they are seeking an answer to their questions.

If this is what philosophy is, then it seems to me that philosophy and medicine have an intimate association. As medicine becomes a science it passes out of the realm of philosophy, but much of medicine has not as yet reached the state of a science. Those seeking to know the truth about disease might be called medical philosophers, and in reality all students of medicine are doing this, so that there would seem to be something of philosophy in medicine. It has been said that philosophers have all sorts of wisdom except common sense, and I am afraid that medical philosophers would be no exception. Many of the wisest of the men in the profession seem to be at a loss to find any application for their wisdom. In other words, they seem to be philosophers in medicine without any interest in science. While science is making great progress, philosophy seems to stand still because, when its problems are solved, they are cast into the realms of science.

Philosophers say that philosophy includes several fields of study and each of these offers abundant opportunity for students of the practice of medicine as well as for those studying the cause and the course of disease.

The first field of philosophy is logic and is defined as the study of ideal methods in thought and in research. Logic tries to understand observations, a faculty that the old-time physician employed to such advantage, and one that must be taught more thoroughly. The visiting physician from the country passing through a medical ward makes a correct diagnosis from the appearance of the patient alone. The patient may have been submitted to all known tests and may have been studied by many scientists, but the country physician with much experience and with powers of observation and deduction which made him a philosopher of medicine arrives at the correct diagnosis, which may have baffled the scientists. If this is philosophy, then we need more of it in our studies and practices.

The second field is esthetics, or the philosophy of the beautiful both in art and in nature. Almost every physician has a rather keen esthetic sense. He appreciates the symmetry of health, and in his care of the sick he strives to restore his patients to a physical state that will not offend the esthetic sensibilities of observers. However, the physician uses the term "art" in its old sense, which may have nothing to do with esthetics. He calls his "craft" an art, and this aspect of medicine is worthy of a moment's digression. Until science began to make such strides, all phases of the practice of medicine and surgery were based on art, in the sense indicated. Art, or craftsmanship, is and always will be a most important part of medicine. A patient may be examined, medical treatment may be carried out, or a surgical operation may be performed in craftsman-like manner; or any of these things may, on the other hand, be done without regard for form or craftsmanship. The result of the examination, treatment or operation will usually depend on whether it has been done according to the principles of the craft. The art of caring for a sick person is learned by the student during his service in the hospital, but I fear that too little stress is placed on this form of instruction. A sick person does not want to be cared for by machine methods, because he feels, and rightly so, that he will not be as well taken care of as though he were having personal

attention from his own physician. The practice of medicine, under any scheme, must give due consideration to the art of medicine.

Ethics is a part of philosophy and is defined as a study of ideal conduct. In no part of our social structure is it so necessary to understand and observe the strictest idea of what is right and what is wrong as in medicine. A more careful estimate of one's character should be made before one is permitted to undertake the study of medicine. There is no such opportunity, in any other field than medicine, for taking advantage of another as there is in everyday practice. The pernicious custom of division of fees depends largely on lack of character and moral principles. This will be corrected only by more careful estimate of the character and morals of those applying for entrance to medical schools. Many students leave college with the idea that feesplitting prevails throughout the country, and such is not the case. A course in medical ethics would not be out of place in the medical school.

Politics, another division of philosophy, is a study of ideal social organization. In this subdivision are placed our studies in the relationship that we have with all other political and social organizations. It is the obligation of the profession to continue studies to help to establish ourselves in our proper place in relation to the local, state and national government. We must all realize that an organization that is responsible for the health and lives of so many individuals each year and that is economically responsible for the expenditure of so much time, energy and money has a large responsibility and obligation. Much of the faulty legislation pertaining to medicine has been enacted because the legislators were not properly informed and because much pressure was brought to bear on them by irregular practitioners.

Medical philosophers must continue to study the ideal social organization and to effect a plan whereby our relationship to society and politics will be most helpful.

ERYTHEMATOUS GROUP OF SKIN DISEASES WITH ESPECIAL REFERENCE TO ABDOMINAL PAIN *

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Willan,[1] in 1808, was the first to describe a case of purpura associated with violent vomiting, excruciating pains in the bowels, and anasarcous swellings of the legs, thighs and hands. Schönlein,[2] in 1848, emphasized the arthritic and Henoch,[3] in 1868, the visceral manifestations. Osler,[4] in 1895, wrote of the constant association of various erythematous lesions of the skin with purpura and with abdominal pain and was criticized at the time for including such a varied group of cases under one head. It is generally agreed that his observations and his association were entirely correct. Furthermore, it is felt that the skin manifestations, especially erythema, urticaria, angioneurotic edema and purpura, the abdominal crises, the arthritic pains and the type of nephritis are manifestations of a single pathologic process. The present series includes thirteen children from the ages of 10 months to 12 years, observed at the Johns Hopkins Hospital, and two adults who came under observation since this report was undertaken. Although the latter two are adults, the similarity of the symptoms to those of the other cases and their significance as far as surgical intervention in this group of cases is concerned are so striking that I have added them.

In the cases detailed here the most constant observations were the skin manifestations. Purpura was present in fourteen, erythema in six, angioneurotic edema in six, and urticaria in five. The purpuric eruption varied from minute petechial spots to rather large ecchymoses. Differentiation between this type of purpura and other hemorrhagic diseases is readily made.

1. Hemophilia is an entirely different story with its peculiar hereditary history and its greatly prolonged clotting time.

2. The so-called idiopathic purpura hemorrhagica is again another story, because of the marked reduction in the blood platelets, and because in many cases the symptoms are totally relieved following splenectomy.

3. The others of the purpuric group comprise a variety of conditions in which purpura occurs as a symptom but in which there is no diminution of platelets or other constant blood defect.[5] Differentiation must here be made from simple symptomatic purpura (the purpura without diminution of blood platelets associated with definite diseases), namely:

(*a*) In infectious diseases, as cerebrospinal meningitis, subacute bacterial endocarditis and typhus fever, or in such chronic infections as tuberculosis.

(*b*) From toxic causes. Factors here are such drugs as iodine, copaiba, chloral, mercury, arsenic and quinine; also such toxic substances as snake venom or histamine.

(*c*) In chronic noninfectious conditions. Chronic nephritis, arteriosclerosis and the debility of old age are examples.

(*d*) From mechanical causes. This may occur when venous stasis develops. Application of a tight bandage or of a tourniquet, paroxysms of whooping cough, or epileptic attacks may bring on a purpuric rash.

The fifteen cases described fall into the group of purpuras with a normal blood platelet count, the so-called idiopathic purpura. These cases occur particularly in children and young adults. Purpuric eruptions of the skin take place alone or in combination with other skin lesions such as the various types of erythemas of the skin, or with urticaria, angioneurotic edema, arthritic manifestations, visceral manifestations, or signs and symptoms of acute hemorrhagic nephritis.

Arthritic purpura or Schönlein's disease is the term preferred when the arthritic symptoms are most pronounced. It should be mentioned that a higher fever usually accompanies this particular type. Henoch, in 1868 and again in 1874, described four cases in which abdominal colic was the most severe symptom accompanying the purpura.

All but one of the fifteen patients had purpuric skin lesions. All except patients 4, 5 and 6 had a normal platelet count. These three patients, however, had symptoms so like the other patients that I have included them in this report although their platelet count is reduced and they should be classified, perhaps,

* From the Surgical Department of the Johns Hopkins University and Hospital.

1. Willan, Robert: On Cutaneous Diseases, London, 1808, vol. 1, p. 454.

2. Schönlein, J. L.: Allgemeine und specielle Pathologie und Therapie, Herisau **2**: 1848, 1837.

3. Henoch, E.: Zusammenhang von Purpura und Intestinalstörungen, Berl. klin. Wchnschr. **5**: 517, 1868; Ueber eine eigenthümliche Form von Purpura, ibid. **11**: 641, 1874.

4. Osler, William: On the Visceral Complications of Erythema Exudativum Multiforme, Am. J. M. Sc. n. s. **110**: 629, 1895.

5. Minot, G. R., and Lee, R. I.: Other Forms of Purpura Than Purpura Hemorrhagica, Nelson's Loose-Leaf Medicine **4**: 127.

as purpura with definitely decreased blood platelets, the so-called idiopathic purpura hemorrhagica.

ABDOMINAL PAIN

All patients, excepting 5 and 10, had abdominal pain, sometimes of excruciating severity. Almost invariably the pain preceded the appearance of the purpuric lesions. The usual story was of an attack of pain followed some hours later by the appearance of purpuric spots, almost never the reverse; evidently the blood vessels of the viscera are permeated by the serum and blood cells before the cutaneous vessels are affected. Certainly, every one is agreed that it is this pathologic change in the intestinal wall which causes the abdominal distress.

Patient 14 had signs of acute peritoneal irritation but no obvious hemorrhagic manifestations. Exploratory laparotomy revealed hemorrhagic spots in the bowel and mesentery as described. No skin lesions appeared until three months after the abdominal pain. Two previous laparotomies had been done on her at some other hospital, for what reason except abdominal pain she did not know; perhaps for earlier attacks similar to this one.

Burrows,[6] in 1904, reported a case of a child, aged 11 years, who had signs of an acute abdominal condition. At laparotomy, congestion and small hemorrhages in the ileum were found. The next day petechial spots were found on the lower extremities, and a more careful history revealed that eleven days previously he had complained of very painful joints, and a skin eruption had been noted.

Sutherland,[7] in 1904, reported a case of a boy, aged 5 years, who was brought in after eight days of abdominal pain and vomiting, with some blood in the stools. A diagnosis of obstruction from intussusception was made. The abdomen was opened, and "on going over the small intestine a part of the bowel about 5 inches (12.5 cm.) long was found, which was dark in color, evidently from extravasated blood, and with thickened walls. There were no other hemorrhages visible." The boy reacted well from the operation and for the next five days had only occasional pain; he then had a skin eruption, with albumin in the urine, and the condition cleared up.

Patient 15, a white woman, aged 32, had a cholecystectomy done eleven years previously. Subsequent to this, abdominal pain, vomiting, erythema and urticaria appeared periodically, and for these symptoms her family physician removed her appendix, performed a second laparotomy to free the postoperative adhesions, and at another time removed a kidney. No relief was as yet afforded, so her remaining ureter was dilated about thirty times, just before she was sent into the Johns Hopkins Hospital.

A case with a number of large purpuric skin lesions accompanied by abdominal pain does not present great difficulty in diagnosis, but the etiology of this pain in the absence of purpura is sometimes quite obscure. Recurring colic may be for many years the sole feature of this remarkable condition. It is self evident of what importance in cases of obscure abdominal pain, especially in children and young adults, is a most careful history of any skin manifestations, joint pains, angioneurotic edema, melena or hematuria; and, secondly, a careful examination of the skin, especially of the lower extremities, for purpura, erythema or angioneurotic edema. Osler[8] writes: "The colic is the most constant of the visceral manifestations, occurring in twenty-five of the twenty-nine cases in my series. So far as I know, it is never dangerous. In no cases recorded has death resulted."

Sometimes, in spite of the certainty that a case belongs to this symptom-complex group, prompt operative intervention is necessary. Sutherland's second case is that of a girl, aged 7 years, admitted to the hospital with Henoch's purpura. She had a prolonged illness with the usual attacks of abdominal pain, hematemesis, melena, albuminuria and hematuria, from which she gradually recovered and three months later was readmitted with a recurrence of all the symptoms. The pain was more severe, referred to the umbilicus, spasmodic and colicky in character; the temperature rose to 104 F., and she died in a general convulsive seizure. Autopsy showed acute generalized peritonitis and intussusception of the cecum and part of the ileum into the colon; the involved portions of the intestine were black, hemorrhagic and gangrenous. It is stated in the article that the fatal attacks must have been induced by hemorrhage into the wall of the colon, leading to paralysis of the affected part and to increased muscular contraction with colic in the adjoining part of the bowel; as a result of these strong contractions, the sound part of the intestine became invaginated into the paralyzed and hemorrhagic portion.

Case 4 is an unusual one in that the little girl, aged 6 years, in one of her purpuric attacks evidently bled very freely into her right ovary. A painless mass was noted deep down in the lower right quadrant of the abdomen during her first stay in the hospital. A year later she was seized with most severe pain in the lower right quadrant, and on admission a pear-shaped, exquisitely tender mass was felt just above the symphysis. At operation a hemorrhagic cyst of the right ovary was found, the pedicle of the ovary having become twisted so that the whole mass was semigangrenous.

KIDNEY LESIONS

A striking concomitant of this disease is the effect on the kidney in these cases. Eight of the fifteen cases showed albumin and blood on urinary examination, practically always accompanied by granular casts. On admission patient 2 presented a typical picture of the so-called acute glomerular nephritis; he was a drowsy colored boy, aged 6½ years, with edema of the face, a swollen tender abdomen, and urine loaded with albumin, red blood corpuscles, and granular and cellular casts.

There were no fatalities in the series, but W. G. MacCallum, after an autopsy on one of Osler's patients, reported that although much degeneration was found in the renal tubules, which contained desquamated epithelial cells, hyaline casts and red blood corpuscles, the glomeruli formed the most striking feature in the section. "The malpighian tuft is almost everywhere much compressed by the new growth of a mass of cells in the area of the capsular space which forms a crescentic mass. These cells lie in a connective tissue outside the capsule. They have often small, subdivided, capsular spaces lined by capsular epithelium, suggesting that the original capsular space was merely invaded by this new growth." Seven of Osler's twenty-nine patients died in uremia. The cases reported here, on the other hand, have all tended toward recovery, but, excepting the last two, they all concerned children.

6. Burrows, H.: A Case of Henoch's Purpura in Which a Laparotomy Was Performed, Brit. J. Child. Dis. **1**: 28, 1904.
7. Sutherland, G. A.: Intussusception and Henoch's Purpura, Brit. J. Child. Dis. **1**: 23, 1904.
8. Osler, William: On the Surgical Importance of the Visceral Crises in the Erythema Group of Skin Diseases, Am. J. M. Sc. n. s. **127**: 751, 1904.

It is possible that these kidney changes are but a slight variation in the manifestation of a specific reaction that dominates this whole group of cases. Of special interest has been the constancy of repetition of certain essential features just mentioned, viz., abdominal pain, purpura, urticaria, angioneurotic edema (urticaria "writ large"—Osler), albumin, blood and casts in the urine; all are associated with one another time after time.

It is well known that the injection of a foreign serum into human beings is often followed, after an incubation period of from three to ten days, by exanthematous eruptions, urticaria, edema of the skin, pulmonary edema, and often albuminuria.[9] This is most often described after the injection of diphtheria antitoxin. It was recognized early that such symptoms were entirely independent of the antitoxic nature of the serum. Moreover, symptoms of this description were by no means regular in patients injected for the first time but seemed to depend on an individual predisposition or idiosyncrasy. Pirquet and Schick[9a] noticed that in those injected a second time, after intervals of weeks or months, the consequent evil effects were rapid in development, severe, and occurred with greater regularity. The skin manifestations of edema, arthritic pain and albuminuria are too commonly known to dwell on in the allergic manifestations of serum sickness, hay-fever, food idiosyncrasies and bacterial anaphylaxis; and Longcope,[10] in 1913, wrote:

> The repeated injection of small doses of horse serum and egg white in dogs, cats, rabbits and guinea-pigs that have been sensitized to these proteins causes injury to the cells of various organs and tissues with resulting inflammatory reactions. . . . In dogs and rabbits, especially, there develops a well marked nephritis characterized by degeneration and necrosis of the epithelium of the loops of Henle, of the collecting tubules, and less frequently of the convoluted tubules. This is accompanied by an extensive small round cell infiltration of the interstitial tissue and later the formation of connective tissue. Together with these changes there are acute and chronic alterations in the glomeruli of all groups of animals.

In the group of cases just described are found all these symptoms and, in addition, purpura of the skin and viscera, and blood, casts and albumin in the urine. Glanzmann,[11] in 1916, and Alexander and Eyermann,[12] in 1927, mentioned an allergic base for this type of purpura. Johannessen,[13] in 1918, believed that it was associated with some infection and that the symptoms were of an anaphylactoid nature. The suggestion has been made that these cases are a manifestation of an allergic phenomenon—that there is first an invasion by bacteria and then an antigen-antibody union, resulting in a bacterial anaphylaxis. The blood capillaries of the body are so altered in this reaction that there results an abnormal permeability of their walls. A consequence may be simple erythema, angioneurotic edema, purpura of the skin and viscera, and a permeability of the glomerular capillaries of the kidneys resulting in these typical pictures of acute nephritis.

Certainly, this report in no wise could claim to substantiate this theory with any firm proof. Much work on cultures from each case, and subsequent bacteriologic and immunologic work, will have to be done. Nevertheless, in the bare report of cases the similarity to allergy is quite striking.

9. Hess-Zinsser-Russell: A Textbook of Bacteriology, p. 354.
9a. Pirquet, Clemens; and Schick, Béla: Die Serum Krankheit, Leipzig, F. Deuticke, 1905.
10. Longcope, W. T.: The Production of Experimental Nephritis by Repeated Proteid Intoxication, J. Exper. Med. **18**: 678, 1913.
11. Glanzmann, E.: Beiträge zur Kenntnis der Purpura im Kindesalter, Jahrb. f. Kinderh. **83**: 271, 379, 1916.
12. Alexander, H. L., and Eyermann, C. H.: Food Allergy in Henoch's Purpura, Arch. Dermat. & Syph. **16**: 322 (Sept.) 1927.
13. Johannessen, C.: Purpura, Norsk. mag. f lægevidensk. **79**: 1209, 1336, 1918

REPORT OF CASES

CASE 1.—A white boy, aged 10 years, had been seized with cramplike pains in both lower extremities ten days previously and, on attempting to walk home, had found the effort so great that he had to be carried. Great red wheals—"hives"—appeared on the legs, remained a few days, and then disappeared to recur again. He experienced some pain in the lumbar region and about the hips; the day before admission, fever was noted and he vomited several times.

He had a temperature of 100.5 F., an erythematous and hemorrhagic eruption over the buttocks and lower extremities, enlarged ragged tonsils, some muscle spasm and tenderness of both right quadrants of the abdomen, and tenderness about the right knee joint; the urine showed quantities of albumin, many red blood cells, a few white blood cells and a few hyaline casts.

These manifestations recurred at intervals during the next two months, and at one time herpes zoster appeared on the right side, involving the eleventh thoracic segment. All symptoms then gradually subsided, and he was perfectly well for three years. He then had an attack of acute tonsillitis, with a temperature of 103 F., and blood and casts in the urine. He recovered rapidly and, when last seen two months later, was perfectly well except for a trace of albumin in the urine.

CASE 2.—A Negro boy, aged 6½ years, had had a rash diagnosed "poison oak" by the local physician three weeks previously, and this was followed by a sore throat, pain and swelling of the abdomen, and vomiting.

He had a temperature of 99.2 F., drowsiness, edema of the face and neck, injection of the pharynx, and a swollen, tender abdomen; the urine showed albumin, red blood cells and casts. Later that same day a red rash developed on the left leg, which was maculopapular, confluent, slightly raised and did not blanch on pressure. This recurred at intervals during the next year. The edema disappeared but the urine never cleared up, and every few months a rash similar to the one described would develop.

CASE 3.—A white boy, aged 6 years, had complained fifteen months previously of a severe headache and pain in the abdomen; four days later, dark, slightly raised spots appeared over his whole body, and the hands, feet, eyelids and abdomen became swollen. In October, 1924, he had about twenty-five "spells," evidently generalized convulsions of short duration; and after that time he passed dark red urine until three weeks previous to admission. He had been forced to remain in bed until a month previously, when the edema subsided greatly.

Physical examination was negative except for a few subcutaneous hemorrhages; the urine showed albumin, blood and a few casts. He was taken from the hospital, against advice, soon after his admission.

CASE 4.—A white girl, aged 6 years, began having intermittent cramplike abdominal pain ten days previously; for three days she had vague rheumatic pains in her legs and arms, and twenty-four hours previously a few red spots appeared on the buttocks and legs.

She had a brownish red, maculopapular, hemorrhagic skin lesion over the ears, face, hard palate, elbows, forearms, buttocks, legs, and soles of the feet; the temperature was 98.2 F.; the urine was normal.

She remained in the hospital for five months, suffering intermittent severe attacks of abdominal pain, followed almost always by a hemorrhagic skin eruption, and many times by melena. On one occasion the joints of the fingers of the right hand and of both knees were very swollen and tender; on other occasions, a soft mass the size of a hen's egg was felt in the lower right abdominal quadrant and a small tender mass over the lower ribs in the anterior axillary line on the right side, but both the masses disappeared after several days. At another time the right eyelid and practically the whole scalp became edematous and painful. She improved a great deal, although the urine never became entirely free from blood and casts.

She was well for two years, except for occasional attacks of mild abdominal pain followed by a purpuric skin eruption, when suddenly she was seized with great pain in the abdomen and with vomiting. She had a temperature of 99 F.; there was marked abdominal tenderness, especially on the lower right side; in the midline about 6 cm. above the pubis was a very hard, pear-shaped mass that was very tender and lay close to the abdominal wall; the urine was normal. No rash appeared.

She was operated on, and it was found that the right ovary, which contained a large hemorrhage, had become semigangrenous owing to a twist of its pedicle. She made an uneventful recovery.

CASE 5.—A white boy, aged 6½ years, as a baby had suffered with eczema, and at 6 years of age large hemorrhagic areas would appear in the skin on the slightest trauma. Two weeks previous to his arrival at the hospital he had acute abdominal pain accompanied by diarrhea and vomiting, and ten days later the face became swollen and blistered for forty-eight hours.

Examination revealed hemorrhagic areas on the skin of practically the entire body, varying in size from small petechiae to areas 10 cm. in diameter, a few being present in the mucous membrane of the mouth; the urine was normal. During the next three months he had several crops of purpura during which times his nose would ooze blood, and at one time a small cut over a bruised finger bled for a number of hours. He was removed from the hospital against advice.

CASE 6.—A white girl, aged 6½ years, had red spots that later turned blue and then brown, which appeared over the thighs and buttocks, and a week later she vomited some blood-tinged material and for several days had tarry stools. Since that time she had had successive crops of rash, at times accompanied by severe joint pains and edema of the extremities.

Her temperature was 99.6 F.; many purpuric lesions of various ages were seen over the buttocks, thighs and legs; there was pitting edema of both ankles; the urine contained albumin, white blood cells and red blood cells. She recovered rapidly.

CASE 7.—A white boy, aged 12 years, had two weeks previously had a dull ache that was present in both lower extremities; a week later the knees and ankles began to swell, and red purpuric spots appeared on the legs and feet, and a few such spots appeared on the chest, abdomen and upper extremities; the urine contained a few red blood cells. Three days after entry he had severe abdominal pain, and bright red blood showed in the stools over a period of a week. He then improved rapidly, the purpuric spots disappeared, and when last heard from two months later he was well.

CASE 8.—A white boy, aged 10½ years, had four months previously had an eruption of bright red spots that suddenly appeared on the legs and feet, which gradually faded, leaving pigmented areas; but ten days after the first crop a new one appeared, coincident with which blood was noted in the urine and stools. For two months he had pains of the joints; there had been some colicky abdominal attacks and hematemesis on two occasions, and the feet and legs had been swollen for three weeks.

The temperature was 99 F.; a red, macular eruption that did not disappear on pressure was distributed over the arms, legs, chest, eyelids and penis; there was some tenderness in the upper left quadrant of the abdomen and some edema of the ankles; the urine contained albumin, white blood cells, red cells and casts. The skin eruption and the abdominal pain cleared up rapidly, and he became well except for a few red blood cells in the urine.

CASE 9.—A white boy, aged 9 years, had had five days previously a few tiny red spots that were seen on his legs, which were tender and associated with some swelling and pain about the ankles and knees. The temperature was 100 F.; a generalized purpuric eruption was distributed over the trunk and extremities; large ecchymoses appeared in both popliteal fossae; the urine showed red blood cells and white blood cells. Abdominal pain became quite severe after admission, and blood appeared in the stools, and then, after several attacks of abdominal cramps followed by a new skin eruption and melena, all symptoms subsided. Six months later he had a rhinopharyngitis and some urticarial wheals on his arms.

CASE 10.—A Negro boy, aged 4 years, had had nosebleed for twenty-four hours a year previously, following a fall, and again, the day before admission, the nose began to bleed and continued to bleed throughout the night. The next morning, black and blue spots were noted on the body.

Distribution of Symptoms

					Skin Lesions				Abdominal Lesions					Kidney Lesions				
Number	Name	Age	Sex*	Race	Erythema	Urticaria	Purpura	Angioneurotic Edema	Arthritic Pain	Abdominal Pain	Vomiting	Melena	Enlarged Spleen	Albumin	Red Blood Cells	White Blood Cells	Casts	Platelet Count
1	W. E.	10 yr.	♂	W	+	+	+	0	+	+	+	0	0	+	+	+	+	380,000
2	E. B.	6½ yr.	♂	C	+	0	0	0	0	+	+	+	0	+	+	+	+	"Normal"
3	J. O.	6 yr.	♂	W	0	0	+	0	0	+	+	0	0	+	+	+	+	448,000
4	R. E.	6 yr.	♀	W	+	0	+	+	+	+	+	+	0	+	+	+	+	40,000
5	F. K.	6½ yr.	♂	W	0	0	+	+	0	+	0	0	+	0	0	0	0	150,000
6	L. T.	6½ yr.	♀	W	0	0	+	0	+	0	+	+	0	+	+	+	+	60,000
7	F. P.	12 yr.	♂	W	0	0	+	+	+	+	+	+	0	+	+	+	—	336,000
8	L. D.	10½ yr.	♂	W	0	0	+	+	+	+	+	+	0	+	+	0	+	
9	I. R.	9 yr.	♂	W	0	+	+	0	+	+	+	+	0	+	+	+	—	350,000
10	B. C.	4 yr.	♂	C	0	0	+	0	0	0	0	0	0	0	0	0	0	
11	T. L.	9 yr.	♂	W	+	0	+	+	+	+	0	0	0	0	0	0	0	325,000
12	M. D.	20 mo.	♀	W	0	0	+	0	0	+	+	0	0	—	—	—	—	
13	F. G.	10 mo.	♂	W	+	+	+	0	0	+	+	0	0	0	0	0	0	
14	M. M.	42 yr.	♀	W	0	+	+	0	0	+	+	0	0	+	+	+	0	323,400
15	D. T.	32 yr.	♀	W	+	+	+	+	0	+	+	0	0	0	0	0	0	200,000

* In this column, ♂ denotes male; ♀, female.

The temperature was 101 F.; there were small, reddish hemorrhagic spots over the entire body, most numerous on the chest and lower extremities, and one or two were present on the palpebral conjunctiva of the right eye and on the soft palate; some dried blood appeared in each nostril; the urine was normal. For the first ten days after admission he had a temperature of from 101 to 103 F., with suggestive signs of consolidation of the left lung. Several rather severe nosebleeds were controlled by packing. He was given human blood serum into each buttock on several occasions; the nosebleeds stopped and the rash disappeared.

CASE 11.—A white boy, aged 9 years, when 6 months old "broke out with a red blotchy rash," and the whole body seemed swollen, but this subsided in a month's time. Three weeks before admission to the hospital the left ankle swelled and became very painful, and a week later the left knee and thigh were involved. For a week both ankles and both calves became swollen and painful as the day progressed but were better after a night's rest, and during this time blotchy red spots appeared on the skin of the lower extremities. Sharp abdominal pain of short duration had been noticed from time to time for over a year.

Examination showed hemorrhagic spots in the skin of both lower extremities, especially on the left side. He recovered rapidly and was perfectly normal when last seen five weeks later.

CASE 12.—A white girl, aged 20 months, had had four months previously a rash over both legs, which occurred three

times subsequently but disappeared quickly. Forty-eight hours before she came to the hospital she was drowsy and feverish and had some diarrhea; a brownish eruption appeared over the legs and the back of the neck, and pain developed in the right side of the abdomen. She was very irritable, with many petechial spots in the skin of the legs and thighs and a few on the ears and on the forearms, and there was definite muscle spasm in the lower right abdominal quadrant. During the next few days new crops of petechiae appeared and abdominal pain was present. Three attacks of purpura occurred in the next six months, which were ushered in with fever, abdominal pain, vomiting and diarrhea. She failed to return to the dispensary after the last attack.

CASE 13.—A white boy, aged 2½ years, was seen when an infant of 10 months with numerous small erythematous patches over the face, trunk and extremities, and numerous large raised wheals in the skin. He was well for two years, then had abdominal pain and attacks of vomiting, had several large purpuric spots on the left leg and had blood in the stools. Within the next three days there were three attacks of abdominal colic and many new purpuric spots. He recovered rapidly; none of these symptoms reappeared up to the time he was last seen at the age of 7 years.

CASE 14.—A white woman, aged 42, had had ten years previously and again two years later, a laparotomy that had been done because of "masses" in the lower part of the abdomen. Forty-eight hours before admission she had fresh blood in several stools, and this was followed by constant pain localized on the right side of the abdomen, and she vomited the next morning. She was obese, with marked tenderness over the whole lower part of the abdomen, especially on the right side, to which pain was referred on release of deep pressure elsewhere; her temperature was 100 F. An exploratory laparotomy showed a small amount of free fluid in the peritoneal cavity and multiple petechial hemorrhages along the walls of the large and small intestine and throughout the mesentery; the appendix appeared normal except for small surface hemorrhages.

Pathologic study showed the appendix covered with a thin delicate layer of fibrin, speckled with diffuse pinpoint hemorrhagic spots; the meso-appendix likewise contained many tiny petechiae; microscopically the mucosa and the submucosa were normal; a few polymorphonuclear leukocytes appeared in the muscular layer; the serosa was thickened by the presence of hemorrhagic points, edema and many mononuclear wandering cells of various kinds.

She made a good recovery. Five months later she had separate, raised erythematous papules about 2 mm. to 1 cm. in diameter over both forearms. Soon after this, abdominal pain started; two weeks later, brownish red hemorrhagic spots, 1.5 cm. in diameter, were found on the medial surface of the upper part of the right arm, and definite muscle spasm was also present in the lower right quadrant of the abdomen. The Bordet-Wassermann test was positive; it had been negative four months previously. She recovered rapidly and was well when last seen.

CASE 15.—A white woman, aged 32, had had an appendectomy eleven years previously, because of two attacks of lower abdominal pain; but the pain and vomiting continued, and nine months later the adhesions were freed at operation. Seven years later pain in the upper right quadrant of the abdomen developed, accompanied by vomiting and some jaundice, and a cholecystectomy was done. Then, following her menstrual periods, she had distressing attacks of abdominal pain and vomiting, and simultaneously the face, arms and back became very red, and great urticarial wheals formed over the abdomen. The next year she had many ureteral dilations, and the right kidney was removed. None of these treatments helped her. She thought that she bruised much more readily than other people.

Examination was negative except for a mild erythema over the upper part of the arms and the chest. Sensitivity tests were negative to proteins, dairy products, epidermal extracts, fruits and vegetables. During attacks of abdominal pain and vomiting a definite erythema was seen over the back and shoulders and upper part of the arms, but no other skin manifestations. She was discharged improved.

SUMMARY

Fifteen cases are described of a syndrome characterized by (1) the skin lesions of purpura, erythema and urticaria; (2) abdominal pain; (3) arthritic pain; (4) angioneurotic edema, and (5) albumin, blood and casts in the urine. Thirteen of the group were children; two, adults.

The recognition of this syndrome is especially important in the differential diagnosis of acute abdominal conditions.

The similarity to allergy is discussed.

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STUDIES OF EXOPHTHALMIC GOITER AND THE INVOLUNTARY NERVOUS SYSTEM

XVII. THE TREATMENT OF PATIENTS WITH DISTURBANCES OF THE THYROID GLAND AND THE INVOLUNTARY NERVOUS SYSTEM *

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Since 1921, we [1] have tried to standardize a therapeutic regimen for patients afflicted with disturbances of the thyroid gland or of the involuntary nervous system. Many unsolved physiologic and clinical problems have rendered our efforts only partially successful. However, necessity compels the therapeutist to evolve a working program and this we shall attempt in what is to follow.

Patients are classified in three groups: (1) those with morphologic changes in the thyroid gland (simple goiter [2]) but without sympathomimetic symptoms (autonomic imbalance; vide infra) or elevation of the basal metabolic rate; (2) those with sympathomimetic symptoms (autonomic imbalance [3]) but without elevation of the basal metabolic rate and with or without goiter; (3) those with autonomic imbalance, goiter and definite and sustained elevation of the basal metabolic rate (exophthalmic goiter, the Graves syndrome and Basedow's disease [4]).

MANAGEMENT OF THE PATIENT

Simple Goiter (Group 1).—Therapy in this condition is based on the following physiologic principles: 1. Goiter is the result of a deficient storage of iodide in the thyroid gland.[5] 2. Following the chemical deficiency there occurs a hyperplasia of the gland with an increase in vascularity and bulk.[6] 3. When iodide is again adequately stored (administration of the salt or decreased physiologic demand for the secretion), there is a conversion from the hyperplastic to the colloidal state [7] with a diminution in the size of the gland. 4. If

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1. Kessel, Leo; Lieb, C. C., and Hyman, H. T.: Am. J. M. Sc. **165**: 384 (March) 1923.
2. Kessel, Leo; and Hyman, H. T.: Am. J. M. Sc. **165**: 387 (March) 1923.
3. Kessel, Leo; and Hyman, H. T.: Am. J. M. Sc. **165**: 513 (April) 1923.
4. Kessel, Leo; Hyman, H. T., and Lande, Herman: A Study of Fifty Consecutive Cases of Exophthalmic Goiter, Arch. Int. Med. **31**: 433 (March) 1923. Kessel, Leo; and Hyman, H. T.: Studies of Exophthalmic Goiter and Involuntary Nervous System, Arch. Surg. **8**: 149 (Jan.) 1924.
5. Marine, David; and Lenhart, C. H.: The Pathological Anatomy of the Human Thyroid Gland, Arch. Int. Med. **7**: 506 (April) 1911.
6. Marine, David; and Kimball, O. P.: Prevention of Simple Goiter in Man, Arch. Int. Med. **25**: 661 (Dec.) 1920.
7. Kimball, O. P.: J. Pharmacol. & Exper. Therap. **8**: 437 (June) 1916.

the storage of iodide is again drained, the gland undergoes a secondary hyperplasia, but when adequate storage is again assured, it reverts to the colloid type.[8] 5. There is no constant relationship between the morphology of the gland (which is dependent on the storage of iodide) and the function of the gland or the status of the involuntary nervous system or the basal metabolic rate. 6. The morphology of the gland has no constant relationship to clinical symptomatology. Hyperplasia is clinically compatible with normality,[9] with exophthalmic goiter [10] or with myxedema.[11] Colloid glands may be found in patients otherwise normal or with exophthalmic goiter. 7. Adenomas and cysts are frequently present in the thyroid gland just as in other parenchymal structures. 8. Adenomas are subject to the same chemical and morphologic changes as the adjacent nontumor tissue.[12] Adenomas function less actively than the adjacent tissue and hence cannot, *sui generis*, give rise to general clinical symptomatology. Adenomas respond to the storage of iodide qualitatively as does the nontumor tissue, but they respond less rapidly. Contrary opinions to the foregoing dicta concerning adenomas will be found in the papers of Plummer and his school.[13]

These clinical factors guide our therapy: 1. Every goiter, endemic or otherwise, begins as a hyperplasia, due to deficiency of storage of iodide. 2. The presence of a simple goiter does not predispose to the development of exophthalmic goiter.[14] 3. The administration of iodide to the goitrous patient is not fraught with the hazard of converting a simple into an exophthalmic goiter.[15] Contrary opinions will be found in the papers of Plummer and Jackson.[16]

The complete anamnesis of the goitrous patient should include a family history of goiter, of residence in a "goiter belt," and of previous episodes suggesting autonomic imbalance or exophthalmic goiter. The physical examination, in addition to the usual careful routine, should include data concerning the size, shape and consistency of the gland and its relationship to the adjacent structures, particularly the trachea. Sympathomimetic symptoms and signs should be enumerated, the eyes carefully tested for the classic phenomena of exophthalmic goiter, the pulse rate counted at rest and, if indicated, the basal metabolic rate obtained.

In the evaluation of the data at hand, several clinical points are to be remembered; the minor eye signs associated with exophthalmic goiter may frequently be encountered as congenital phenomena in otherwise normal individuals; a resting pulse rate of 70 or less almost precludes the possibility of the existence of an active autonomic imbalance or of exophthalmic goiter; the basal metabolic rate should be determined by a physician who appreciates the importance of obtaining basal conditions physically and psychically and should not be entrusted to a technician. Many patients with "lump in the neck" develop a "goiterophobia," [17] with anxiety symptoms that may closely simulate either autonomic imbalance or pressure on the trachea. The effect of reassurance and bromides on such patients must be noted before a diagnosis can be made. Pressure symptoms should be corroborated by a roentgenogram and direct laryngeal inspection.

All patients with simple goiter, cysts or adenomas of the thyroid gland should receive iodides. The drug may be administered as the saturated solution of sodium iodide in doses of from 0.2 to 0.5 cc. daily. The salt can be added to soup or any other liquid vehicle. It should be given daily, except on Sunday, for from two to four weeks before a second examination is made. Patients with "goiterophobia" should also be given bromides or other sedatives. The patient with uncomplicated simple goiter should receive reassurance that he is no more a candidate for exophthalmic goiter than his nongoitrous neighbor, that pressure symptoms are infrequent, that the goiter is benign and that complications are rare. Within the month the gland should be reexamined. This provides ample time for the complete conversion of the hyperplasia into the colloidal stage. Whether or not the goiter responds, maintenance doses of iodide two days in the week are continued for at least a year, with the object of preventing secondary hyperplasia. Double doses are employed during pregnancy and menses. Prophylactic dosage to female children of the family is also prescribed. The promiscuous and uncontrolled use of iodized foods is inadvisable.[18] Iodide therapy, both curative and prophylactic, should be controlled medically.

When no change has accompanied administration of iodide the patient must accept his goiter as a circumstance in life. Roentgenotherapy, electrotherapy and other complicated forms of approach are futile so far as shrinkage of the gland is concerned. Operative intervention in the simple uncomplicated goiter is to be regarded as a cosmetic procedure to which the physician must accede if the vanity, the insistence or the anxiety of the patient and his friends demands. It is not a prophylactic operation against the development of exophthalmic goiter. For cosmetic thyroidectomy, no special preparation is necessary; local anesthesia is preferable; the operative risk is negligible, and complications are rare. Iodides should be administered after operation to prevent hyperplasia of the thyroid remnant.[19]

In simple goiter we recognize four medical indications for operative intervention: (*a*) suspicion of malignancy; (*b*) objective signs in the trachea or larynx indicating pressure; (*c*) frequent thyroid apoplexy from intracapsular rupture of a brittle and thickened vessel, and (*d*) marked deformity from an unsightly goiter. Intracapsular hemorrhage is not uncommon and is evidenced by sudden pain and swelling of the gland. At operation in these cases the only added precaution is the prevention of tracheal collapse, which may occur when the pressure has been both severe and prolonged (tracheomalacia). A tracheal cannula and a tracheotomy set should be at hand when this dread complication is feared. In the examination of histologic slides, the pathologist must bear in mind that in simple hyperplasia the appearance of malignancy may be so closely simulated as to baffle the most expert observer. Unless

8. Marine, David: Pathological Anatomy of Exophthalmic Goiter, Arch. Int. Med. **8**: 265 (Sept.) 1911.
9. Marine, David; and Kimball, O. P.: J. Lab. & Clin. Med. **3**: 40 (Oct.) 1917.
10. Wilson: Am. J. M. Sc. **147**: 344 (March) 1914.
11. Hart, E. B., and Steenbock, Harry: J. Biol. Chem. **33**: 313 (Feb.) 1918.
12. Marine, David: J. M. Research **27**: 229 (April) 1915.
13. Plummer, H. S.: Tr. Am. Phys., 1916, p. 138. Pemberton, J. de J.: Present-Day Surgical Treatment of Diseases of the Thyroid Gland, J. A. M. A. **85**: 1882 (Dec. 12) 1925. Plummer, H. S.: Function of the Thyroid Containing Adenomatous Tissue, abstr. J. A. M. A. **91**: 122 (July 14) 1928.
14. Marine and Lenhart (footnote 5). McCarrison, R.: Brit. M. J. **1**: 178 (Feb. 4) 1922.
15. Kimball, O. P.: The Efficiency and Safety of the Prevention of Goiter, J. A. M. A. **91**: 454 (Aug. 18) 1928.
16. Plummer, H. S., and Boothby, W. M.: Illinois M. J. **46**: 401 (Dec.) 1924. Jackson, A. S.: Boston M. & S. J. **193**: 1138 (Dec. 17) 1925.
17. Kessel, Leo; and Hyman, H. T.: Studies of Exophthalmic Goiter and the Involuntary Nervous System, J. A. M. A. **88**: 1478 (May 7) 1927.
18. Iodized Milk, editorial, J. A. M. A. **96**: 532 (Feb. 14) 1931.
19. Marine, David: Bull. Johns Hopkins Hosp. **21**: 95 (Jan.) 1911.

corroborated by clinical observations, we do not accept the histologic diagnosis of carcinoma of the thyroid gland.

In hospitals or clinics where goiter patients are treated, the simple cases should not be permitted to meet those with exophthalmic goiter, for anxiety symptoms (goiterophobia) may result from the encounter.

Autonomic Imbalance (group 2).—Patients with autonomic imbalance most frequently present sympathomimetic symptoms, so called because they mimic the symptoms produced by chemical or electrical stimulation of the thoracolumbar division of the involuntary nervous system. Sympathomimetic symptoms [3] include flushing, sweating, tremor, tachycardia, palpitation, elevation of blood pressure, nervousness and cardiac irregularity. Not all the symptoms necessarily occur, but usually each individual responds characteristically and constantly. This we call the individual "reaction picture." In autonomic imbalance the "reaction picture" [20] occurs spontaneously. The symptoms tend to wax and wane. The fundamental condition is congenital. Exciting factors include psychic trauma and focal infection, particularly in the upper respiratory tract.

Autonomic imbalance concerns us chiefly in this place because of the similarity of its sympathomimetic forms to exophthalmic goiter. At the present writing the so-called vagotonic type is not our concern. Autonomic imbalance differs from exophthalmic goiter in that elevation of the basal metabolic rate does not occur, and the symptoms secondary to the metabolic disturbance (asthenia, loss of weight) are not encountered. Except by careful history, patients with autonomic imbalance cannot be distinguished from those in the quiescent stage of exophthalmic goiter.

Great confusion exists as to the physiologic relationship between the thyroid and other endocrine glands and the involuntary nervous system, and as to the clinical relationship between autonomic imbalance and exophthalmic goiter. It is our purpose to summarize our views and indicate differences of opinion. There is no physiologic evidence that the thyroid or suprarenal glands control the tonus of the involuntary nervous system. Thyroxin does not sensitize the nervous system so that it gives an increased response to minimal or subminimal stimuli.[21] Epinephrine is not secreted in concentrations sufficient either to regulate the tonus or, in an emergency, to stimulate the involuntary nervous system.[22] Contrary evidence will be found in the papers by Cannon and his school.[23] We are ignorant of the chemical or hormonal factors that control the tonus of the involuntary nervous system normally or that stimulate it in emergency. Pharmacologically, while we have powerful stimulants for the thoracolumbar system in amines such as epinephrine, we dare not employ the potent depressor (ergotoxine) in effective doses. Specific therapy for the control of this type of autonomic imbalance is therefore clinically unavailable.

Clinical information concerning autonomic imbalance is meager and controversial. The imbalance is congenital. It is extremely frequent among sedentary workers. Autonomic imbalance is the anlage of exophthalmic goiter, but the number of patients with imbalance who go on to develop exophthalmic goiter is much too small to warrant prophylactic thyroidectomy.

Many individuals with simple autonomic imbalance have an associated hyperplasia of the thyroid gland, which makes the resemblance to exophthalmic goiter the more striking. In a "goiter belt" every patient with autonomic imbalance presents a syndrome closely simulating exophthalmic goiter. At the seacoast or where endemic goiter is infrequent, this diagnostic error is less likely. Subtotal thyroidectomy in the patient with autonomic imbalance is not indicated, for it neither relieves the symptoms nor prevents the development of exophthalmic goiter. If performed, the operation is accompanied by little risk and few, if any, complications.

Patients with autonomic imbalance should be studied with even greater care than those with simple goiter. All should have the basal metabolic rate estimated at least twice.

The clinical management of patients with autonomic imbalance is exceedingly difficult and frequently disappointing. Whether or not the imbalance is accompanied by goiter, iodides may be exhibited and at times seem to exert as specific an effect as in true exophthalmic goiter. Ergotamine tartrate specifically depresses the thoracolumbar system and doses of from 0.001 to 0.004 Gm. three times daily may be tried. Rarely have we obtained a noteworthy or clearly defined clinical result. The use of endocrine products is also disappointing. Foci of infection should be eradicated. Excellent results may be obtained through psychotherapy, though no particular technic is required to study or treat these patients. A careful inquiry into the patient's routine, his ambitions and frustrations will yield a treasure trove of information. Fatigue is a common exciting factor. Therapy consists primarily in pointing out the relationship between symptoms and the psychic trauma and reassurance that the symptoms are not evidences of any organic disease or even harbingers thereof. The obvious psychic trauma is eliminated, if possible. Otherwise, the patient is advised to accept his burden and bear his cross. A word to relatives, friends or business associates is frequently helpful. Relaxation and rest are prescribed. Bromides and hypnotics are very useful symptomatically. Spending Sunday or the week-end in bed frequently stabilizes the nervous system. A vacation may be followed by complete relief of symptoms, but in all instances patients must be warned that recurrence of the "reaction picture" will follow provocation. When the budget permits, a complete rest cure of the Weir Mitchell type may be rewarded by a gratifying result. In a few instances, the psychic trauma is not readily revealed, and more elaborate psychiatric methods, particularly psychoanalysis, are indicated.

The results are, at times, brilliant. When the symptoms point to a single organ (heart, stomach or intestine) the specialist often treats these patients as if they were suffering from an organic neurosis. This is a grievous error, for it focuses the attention of the patient on his viscus and brings him in contact with other patients who have definite organic diseases. The anxiety state created thereby tends further to excite the imbalance and recreates the "reaction picture" or clinical syndrome. After being unsuccessfully managed in this way, these patients, to the chagrin of the specialist, sometimes find temporary relief at the hands of the unorthodox practitioners who, in their ignorance, either

20. Lieb, C. C., and Hyman, H. T.: Am. J. Physiol. **63**: 60 (Dec.) 1922.
21. Lieb, C. C., and Hyman, H. T.: Am. J. Physiol. **63**: 66, 87 (Dec.) 1922.
22. Stewart, G. N., and Rogoff, J. M.: Am. J. Physiol. **50**: 305 (April) 1920; **45**: 268 (April) 1918; **69**: 605 (Aug.) 1924.
23. Cannon: Am. J. Physiol **23**: 356 (April) 1908. Cannon, W B., and others: Ibid. **79**: 16 (Jan.) 1927. Cannon, W. B., and Britton, S. W.: Ibid. **79**: 433 (Jan.) 1927.

deny the symptom (Christian science) or divert the attention elsewhere (spine or bowel).

The management of patients with autonomic imbalance is at once one of the most irritating and time-consuming but instructive and gratifying problems that the practitioner will meet in his office. The tyro in particular will do well to give his best efforts and unlimited time to their individual problems.

Exophthalmic Goiter (group 3).—Exophthalmic goiter represents a further development of autonomic imbalance.[24] To the sympathomimetic manifestations are added a functional thyroid abnormality, which is responsible for the elevation of the basal metabolic rate and its attendant phenomena (asthenia, loss of weight and excessive tachycardia). Certain definite clinical observations guide our therapeusis. Exophthalmic goiter cannot be produced experimentally in animals or in man. It is unrelated to the problem of endemic goiter and cannot be regarded as a purely thyroidal disease. While hyperplasia of the thyroid is a usual accompaniment of the disease,[10] the syndrome may persist after iodides have converted the hyperplasia to colloid;[25] moreover, hyperplasia may exist in many otherwise normal individuals, in endemic goiter[26] or even in animals dying of myxedema.[27] Exophthalmic goiter is not related to or influenced by adenomas;[28] hence, operative surgery must be aimed at ablation of the nontumor tissue rather than enucleation of the adenoma. Contrary opinions regarding the pathogenesis of the disease and its relationship to adenomas will be found in the papers of Plummer and Cannon and their co-workers.[29]

Exophthalmic goiter is distinctly a disease of civilization and of the civilized.[30] The stress and strain of modern life and the resultant psychic trauma seem necessary predisposing factors. Nevertheless, the disease is not a pure neurosis, and the therapeutic approach that is limited to psychotherapy, ignoring other factors, is short sighted and must be unsuccessful. The disease is closely related to and affects sex life, particularly in the female,[31] and Marine has advanced data suggestive of a dominant, if not primary, disturbance in the suprarenal cortex.[32]

The spontaneous course of the symptoms of exophthalmic goiter is toward recovery in at least 60 to 70 per cent of patients[33] under 35 years of age. Under favorable social and economic conditions the majority of these patients are permanently benefited. Recovery cannot be maintained, however, in the face of economic, social or psychic stress, and exacerbations may result from focal infection, particularly in the upper respiratory tract. In elderly patients (over the age of 35) the spontaneous course of the disease is rarely toward recovery; exacerbations are frequent, and abnormalities in the circulatory system and liver are prone to supervene. These include hypertension, myocarditis, paroxysmal and permanent cardiac irregularity, and cirrhosis of the liver.

Administration of iodide[34] will temporarily control the symptoms of the functional disturbances of the thyroid but will not cause them to abate permanently. Subtotal thyroidectomy[35] will, as a rule, abolish the symptoms of abnormal thyroid functioning but will not affect the underlying autonomic imbalance or the mechanism that is directly responsible for the imbalance.

Subtotal thyroidectomy is the only efficient operative procedure. The immediate mortality for this operation in true exophthalmic goiter is reported to vary from less than 1 to more than 10 per cent. Certain specially trained teams report an amazingly low mortality rate, but the nation-wide mortality for the operation is probably well over 10 per cent. The low mortality rate for exophthalmic goiter reported by surgeons in endemic goiter belts should be carefully analyzed, for there is a strong possibility that their groups include instances of endemic goiter or of autonomic imbalance with anxiety symptoms. In the latter group the operation is rarely indicated; complications are infrequently encountered, and the mortality is negligible.

Subtotal thyroidectomy in exophthalmic goiter is a palliative measure, and while it is of unquestioned efficacy it does not remove the prime cause of the symptom; consequently it is to be preceded and followed by the most thorough cooperation between the surgeon and the internist. The period of convalescence is measured in months rather than in weeks. The patient is not to be discharged as cured but is to be treated for such symptoms as inevitably persist or recur. Again, the clinician is warned not to accept, without clinical confirmation, a histologic diagnosis of a malignant growth.

The patient with exophthalmic goiter should be institutionalized and a careful physical examination and investigation of the psychic status made. High calory feeding, sedatives and hydrotherapy are prescribed. Foci of infection are sought for and, if possible, eradicated as soon as the general condition of the patient permits. A very intimate transference between the patient and the physician is attempted. In difficult or obscure psychic conditions, the aid of a trained psychiatrist is sought, but the need is rare. Sodium iodide is immediately administered as a saturated solution from 0.2 to 0.5 cc. three times a day. Although we have seen patients continue to present symptoms or even grow worse while in the uphill phase of the disease, we have never been convinced that the iodides were responsible for the persistence or exacerbations of the symptoms. We recognize no contraindications for their use. In approximately 50 per cent of instances, more often in the younger than in the older group, striking, almost specific, improvement will occur. The morphology of the gland (adenoma[28]) in no way modifies the response.

INDICATIONS FOR OPERATION

When the effect of the iodide has reached its fastigium, surgical intervention is indicated in the following groups: (1) patients over the age of 35; (2) in the presence of pressure symptoms corroborated by roentgen or laryngoscopic observations; (3) when the gland suggests a malignant degeneration; (4) all patients with organic damage, as indicated by persistent

24. Kessel, Leo; and Hyman, H. T.: Exophthalmic Goiter (Graves Syndrome) and Involuntary Nervous System, J. A. M. A. **85**: 1017 (Oct. 3) 1925.
25. Marine, David; and Williams, W. W.: The Relation of Iodine to the Structure of the Thyroid Gland, Arch. Int. Med. **1**: 349 (May) 1908.
26. Kimball, O. P.; Rogoff, J. M., and Marine, David: The Prevention of Simple Goiter in Man, J. A. M. A. **73**: 1873 (Dec. 20) 1919.
27. Smith: J. Biol. Chem. **29**: 215 (Feb.) 1915.
28. Graham, Allen: Exophthalmic Goiter and Toxic Adenoma, J. A. M. A. **87**: 628 (Aug. 28) 1926.
29. Plummer (footnote 13, third reference). Cannon, W. B.: Am. J. Physiol. **79**: 433 (Jan.) 1927, with bibliography.
30. Moschcowitz, Eli: The Nature of Graves Disease, Arch. Int. Med. **46**: 610 (Oct.) 1930.
31. Kessel, Leo; and Hyman, H. T.: Studies of Exophthalmic Goiter and the Involuntary Nervous System, J. A. M. A. **88**: 2032 (June 25) 1927.
32. Marine, David: Am. J. M. Sc. **180**: 767 (Dec.) 1930.
33. Kessel, Leo; and Hyman, H. T.: Exophthalmic Goiter and Involuntary Nervous System, Arch. Int. Med. **40**: 314 (Sept.) 1927.
34. Plummer, H. S.: Oxford Medicine, New York, Oxford University Press **3**: 839, 1922.
35. Kessel, Leo; and Hyman, H. T.; Exophthalmic Goiter and Involuntary Nervous System, Arch. Int. Med. **40**: 623 (Nov.) 1927.

hypertension, cardiac irregularity, alterations in the functioning of the liver or in the pigmentation of the skin; (5) two or more exacerbations of the disease, despite adequate conservative treatment; (6) all patients, young or old, who must necessarily be returned to a life of social or economic stress, or who are unable perfectly to adjust themselves to their problem, and (7) when the goiter is unsightly and regarded by the patient as a symbol of the disease.

ANTEOPERATIVE REGIMEN

The patient is informed as soon as a decision to operate has been reached. Not infrequently this announcement is accompanied by a relief of symptoms.

If routine therapy has reduced the basal metabolic rate and the pulse to within 20 per cent of normal, no other anteoperative therapy is required. Sufficiently large doses of a hypnotic are administered for the thirty-six hours preceding operation to maintain the patient in a state of mental rest. Preoperative digitalization is of no value unless a definite circulatory insufficiency exists.

When the patient has not responded to rest and iodides, or when the elevation of the basal metabolic rate and pulse rate is persistent, or in cases in which there is vital organic damage, anteoperative treatment should not exceed three weeks, as the strain of waiting far exceeds any benefit from further expectancy. Such patients should be prepared for operation with a continuous intravenous drip of 5 per cent dextrose. The infusion is started either just before or during the operation and the rate of inflow must not exceed 3 cc. a minute.[36] The patient should be fully digitalized only when there are signs of cardiac insufficiency. The choice of anesthetic is left to the surgeon and the patient. Very severe cases should have a stage operation, and the decision is a matter of fine judgment and should usually be arrived at by the surgeon and the internist. The medical adviser should be present at operation and share in any decisions concerning the procedure.

POSTOPERATIVE TREATMENT

The surgeon and the internist in consultation should direct the postoperative treatment. When the patient responds well, iodides should be resumed after operation as soon as swallowing permits; the diet should be gently forced, and the intravenous drip may be stopped within thirty-six hours. Sedatives should be exhibited liberally and opiates given freely to allay pain.

If a postoperative crisis is encountered, an intravenous drip should be started. To the drip may be added iodide and one of the soluble hypnotics, such as phenobarbital, dial or amytal. Hyperpyrexia is treated by hydrotherapy. Morphine and paraldehyde may be used if the usual hypnotics fail. Caffeine, camphor, strychnine and epinephrine are to be avoided. Digitalization will not alter the heart rate nor sufficiently influence the crisis to warrant its use. Ergotamine tartrate may be tried by hypodermic injection but has not been useful in our experience and may cause vomiting. The crisis is fraught with danger. It is often impossible to predict which patient will develop this treacherous complication, and often the most toxic cases pursue a benign course, while an apparently simple case may develop a severe and even fatal crisis. Postoperative paralysis of the vocal cords cannot be remedied, but if pressure symptoms appear, a tracheal cannula and a tracheotomy set must be kept in readiness. Postoperative tetany can usually be controlled by the administration of calcium salts and parathyroid extract. In exceedingly desperate instances, in which the patient's life is despaired of, we cautiously employ thyroxin intravenously.[37] Hemorrhage, infection and pulmonary complications are treated as in any other condition. Tight bandaging and the exudation of serum or blood may give rise to severe pressure symptoms.

CONVALESCENCE

In convalescence the initial regimen is reinstituted. The basal metabolic rate falls to normal, the tachycardia lessens, the majority of the minor symptoms disappear and the patient experiences a great sense of relief and of well being. The exophthalmos and the tremor together with asthenia are persistent symptoms, however, even when a really radical removal of gland tissue has occurred. High calory feeding, hydrotherapy, psychotherapy, rest, iodides and sedatives are resumed. If all is well the patient is discharged from the institution in from ten days to a few weeks and advised to rest in the country for from three to six weeks. Rest at home should follow for another period of equal length, and then the thread of life should be slowly and gradually resumed. Rarely is the patient returned to complete social and economic restitution in less than four months, and the average is well over six months. Myxedema is not an infrequent late complication following subtotal thyroidectomy. This complication need not be treated unless the patient presents symptoms, no matter how low the basal metabolic rate. In the presence of symptoms, however, we have no hesitancy in employing thyroxin in sufficient dosage to bring the rate to slightly below normal.

In those patients, usually below the age of 35, who have responded favorably to medical therapy, convalescent treatment is identically the same as for the patient who has had a subtotal thyroidectomy.

Remissions and exacerbations in both groups are treated in the same manner as the first attack except that in the nonoperative group a subtotal thyroidectomy is advised. When a serious exacerbation occurs in a patient in the operative group, a search is made for a thyroid remnant and, if present, it is resected surgically. Otherwise the patient is referred for roentgen therapy. We have never been sufficiently impressed with the results of roentgen therapy to warrant our pursuing it systematically. The results which the enthusiasts have shown to us and which we have read about are uncritical and unconvincing. The roentgen therapist, rarely a clinician, does not realize that the spontaneous course of the disease is toward recovery. He is likely to attribute any unfavorable outcome to his therapeutic endeavor.

As our experience increases, we find that we are advising operation earlier and more frequently in the groups of selected cases. Originally we studied fifty patients in whom we attempted to observe the spontaneous course of the disease. The fate of these patients was compared with that in other groups: in one we recommended subtotal thyroidectomy without iodides; in the other group iodides were administered before the operative intervention.[33]

At no time previous to this present publication have we expressed an opinion as to the optimum form of therapy, though by many our work has been interpreted

36. Hyman, H. T., and Hirshfield, Samuel: Studies of Velocity and the Response to Intravenous Injections, J. A. M. A. **96**: 1221 (April 11) 1930.

37. Kessel, Leo; and Hyman, H. T.: Exophthalmic Goiter (Graves Syndrome) and Involuntary Nervous System, J. A. M. A. **84**: 1720 (June 6) 1925.

as a plea for medical management as opposed to surgical intervention.[38]

The skill and splendid cooperation of the surgeons have done much to establish an adequate form of therapy for the patient with exophthalmic goiter. The surgical enthusiast, however, must recognize that operative intervention, at best, is a palliative measure, and that a specific form of therapy has not yet been found. We look forward to the day when some admirable student of the disease will render archaic the present forms of therapy by discovering a specific physiologic or pharmacologic agent for the control of the disease.

940 Park Avenue.

STUDIES ON EFFECT OF PHYSICAL THERAPEUTIC PROCEDURES ON FUNCTION AND STRUCTURE

I. EFFECT ON BLOOD FLOW IN A NORMAL LIMB *

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There is a great deal of interest at present in the treatment of various conditions by physical therapeutic procedures. Most of these methods are used only as adjuncts to older accepted forms of treatment, but the results obtained by the combined therapy is encouraging, in that quicker and often earlier recovery has been attained. This has awakened a new interest on the part of physicians, who have always manifested interest in methods to obtain complete restoration in function and structure, especially if the period of disability can at the same time be shortened.

Investigating the question concerning the value of electrical muscle stimulation in two of the conditions in which this form of treatment is quite common, namely, anterior poliomyelitis and peripheral nerve injuries, one is struck by the conflicting clinical reports and the available experimental data. Clinically there is some difference of opinion concerning the value of electrical stimulation if there is any, though most neurologists and surgeons treating these types of cases do apply it. Lovett and Jones [1] believe that in the treatment of poliomyelitis heat, massage, and muscle training are of the greatest importance, and that electrical stimulation is of no particular value but may even do harm if, because of its use, the other procedures are disregarded.

Even among those who believe in the value of electrical stimulation there is disagreement as to the rôle played by this form of treatment in bringing about recovery to the paralyzed muscles. Stiles and Forrester-Brown [2] are of the opinion that it prevents deformities, such as tendon adhesions and stiff joints, that it does not prevent or lessen muscle atrophy, and that it does not have any effect in aiding nerve regeneration. The use of galvanic stimulation, they believe, is of benefit in the reeducation of muscles and in maintaining the patient's interest in muscle function during the time he is unable to use this power voluntarily. Bristow,[3] on the other hand, believes that by producing a contraction there result all the physiologic changes following a voluntary contraction and that "any general effects of electricity on the patient may be entirely disregarded." Essentially the same ideas as to the mode of action are held by Stewart and Evans,[4] but they also believe that electricity in its "ionic form" to the nerves at their site "aid recovery." Quite opposed to these ideas is the statement of Stookey [5] that "contractions per se are not beneficial" but that the improvement of nutrition and circulation aids in the removal of waste products. For this purpose he uses the sinusoidal current in preference to galvanic stimulation. Another theory advanced for the use of electricity is that its chief value lies in the preservation of muscle tone. The Sharpes [6] in advancing this idea and describing their treatment also point out that massage is the most efficient factor in the after-treatment and that passive motion and heat should be used to aid absorption, relieve edema and prevent or minimize the fibrotic changes usually present.

In addition, however, to the various claims made for the value of electrical stimulation, practically without exception, each author also indicated that the use of heat, massage, passive motion and, later, active exercises should be used to aid nutrition and circulation. Naturally one gathers from these reports the fact that clinically there must be some value to these treatments which are practically universally used. Likewise, one cannot fail to wonder at the apparently extreme differences in opinion as to the exact mode of action of these procedures. It would seem, then, that a contribution of value to physical therapy would be an attempt to study, by a series of physiologic experiments, the action of each of these methods which have proved of clinical value and thereby place them out of the class of empiric treatments. If feasible and accomplished it should prove of value in determining which of these methods should be used for particular effects, the sequence in which they should be used and, when necessary, the most efficient combination of the various procedures.

The literature of experimental studies on the physical therapeutic treatment of peripheral nerve injuries is even less extensive than the clinical reports. Langley and his co-workers [7] employing the method of denervating both gastrocnemii of a rabbit, treating one and allowing the other to go untreated, determined the result of treatment by comparison of the weight of the two muscles. Although they found some slight evidence to suggest that electrical stimulation was of beneficial value, passive motion even less and massage practically nil, the results were not outside the limits of error. Prolonged stimulation, making the work done comparable to that voluntarily performed by a muscle, did not show better results, and merely brought forth the observation that rather than a "disuse" atrophy there is probably a "fatigue" atrophy (due to fibrillation and a rate of "breakdown" or catabolism greater than normal). Roberts,[8] following practically the same experimental methods, came to the conclusion that loss of weight could not be used as the sole standard of comparison because there is too great a variation in

38. Richter, H. M.: Thyroidectomy: Its Relation to the Cure of Thyrotoxicosis, J. A. M. A. **88**: 888 (March 19) 1927. Jackson, A. S.: Exophthalmic Goiter and the Involuntary Nervous System, ibid. **85**: 1660 (Nov. 21) 1925.

* From the departments of Physiology and Physical Therapy, Northwestern University Medical School.

1. Lovett, R. W., and Jones, Robert: Orthopedic Surgery, New York, William Wood & Co., 1923.
2. Stiles, H. J., and Forrester-Brown, M. F.: Treatment of Injuries of the Peripheral Spinal Nerves, London, H. Frowde: Hodder & Stoughton, 1922.
3. Bristow, W. R.: Treatment of Joint and Muscle Injuries, New York, Oxford University Press, 1917.
4. Stewart, J. P., and Evans, A.: Nerve Injuries and Their Treatment, London: H. Frowde: Hodder & Stoughton, 1919.
5. Stookey, B. P.: Surgical and Mechanical Treatment of Peripheral Nerves, Philadelphia, W. B. Saunders Company, 1922.
6. Sharpe, William; and Sharpe, Norman: Neurosurgery, Philadelphia, J. B. Lippincott Company, 1928.
7. Langley, J. N., and Kato, T.: J. Physiol. **49**: 432, 1915. Langley, J. N.: Ibid. **50**: 335 (July) 1916, **51**: 377 (Dec.) 1917. Langley, J. N., and Itagaki, M.: Ibid. **51**: 202 (July) 1917.
8. Roberts, F.: Brain **39**: 297 (Oct.) 1916.

wasting to which muscles are liable. From his clinical observations, however, he states that, although it is not known how the current acts, he assumes that "just as passive motion breaks down adhesions at joints, so internal movement of the muscle itself maintains mobility in the sarcoplasm and prevents fibrosis during regeneration of the sarcostyle."

Hartman and Blatz [9] used as their criterion of the effectiveness of treatment the ability of the muscle to do work against a load when stimulated. Treated muscles were found to be no more efficient or strong than untreated muscles. They also came to the conclusion of Langley that a denervated muscle is "active," and they therefore question whether it needs further activity.

In undertaking these studies it was thought best that before one attempted to apply the methods to the denervated limb it would be advisable to determine how these agents acted on certain phases of the physiology of the normal limb. If, then, the action is later studied on the denervated limb one would be better able to understand some of the physiologic changes that have taken place during degeneration. With this plan in view, it seemed only logical that, since a denervated limb presents such marked vascular changes, a study be made of the effects of the various physical measures on the blood flow. The results of such a study on a normal limb are here presented.

EXPERIMENTAL PROCEDURE

Dogs weighing from 10 to 15 Kg. were anesthetized with sodium barbital administered orally; the dosage used was 0.23 Gm. per kilogram of body weight. When the animal was sufficiently under the anesthetic, both femoral veins were exposed. The left was cannulated centrally and used for the reinjection of blood; the right was cannulated peripherally and the record of the blood flow obtained from this limb, which was always the treated one. On the limb from which the records were taken the branch of the saphenous vein entering the femoral vein was ligated. This was done in order to limit the record to being that of blood flow only in the muscles. Heparin was injected intravenously following the ligation of the first vein; 15 mg. per kilogram of body weight was the dosage used.

The method used for recording the rate of blood flow was to lead the blood from the peripheral end of the vein through a well oiled glass cannula and rubber tube to a vertically placed tube 2.5 cm. in diameter and 18 cm. in length, having both an inlet and an outlet at the bottom. A float made of x-ray film supporting an aluminum indicator was used to record on a slowly moving drum. When the blood filled the tube it was drained by opening the clamp on the outlet, at the same time keeping the inflow tube open so that there would be no damming back of the blood. The removed blood was reinjected into the opposite vein at as nearly as possible the same rate as it was being removed.

Electrical stimulation was obtained by the use of a standard type of commercial stimulator which could be easily regulated as to type and strength of current. The dispersive electrode was placed on a well shaven area over the chest and the stimulating electrode applied to the muscles just above the knee joint on the ventral side of the limb.

Radiant heat was obtained by the use of a 1,000 watt incandescent lamp directed toward the limb, the rest of the body being protected as well as possible from the direct rays of the lamp.

Passive motion was effected by completely flexing the thigh on the abdomen and the leg on the thigh at the same time.

Massage of a deep kneading type was given to the deep muscles just above and below the knee joint, at the same time attempting not to exert pressure on the femoral vein.

SUMMARY OF RESULTS

The results, expressed in centimeters per minute as a measure of the rise of the indicator in that period of time, were tabulated. This figure was used as a substitute for the actual volumetric figure since with a tube of uniform diameter the volume would always be in direct proportion to the height, the other factors remaining constant.

Radiant Heat.—In nine trials there was an increase, in four no change, and in one a decrease in the rate of flow during stimulation as compared with the control rate of flow. The maximum was usually attained sometime during the period that the heat was being applied, with a tendency in some cases to decrease if the stimulation continued. The immediate return rate varied but in many cases maintained the increase and then gradually returned to the control rate of flow.

Massage.—In two trials there were no changes; in only one was there a decrease, and in the other twenty-one an increase in the rate of flow immediately on applying massage. This increase diminished and frequently became less than the control even before the manipulation was discontinued. Immediately following the cessation of massaging, all but five showed a rate of either less or the same as the control, but recovery and return to normal was fairly rapid in practically all of these.

Passive Motion.—In thirty-six trials the immediate effect in all but two, in which there were no changes, was an increase in the rate of flow, which later decreased and was either the same as or less than the control at the end of and immediately following the stimulation. Recovery and reestablishment of the control rate took place within a minute or two.

Sinusoidal Stimulation.—Stimulation caused a slight increase in twelve and decrease in nine, with practically no change in thirteen trials. The return rate showed an increase over the control periods in only four trials, the rest showing either a decrease or a maintenance of the control rate of flow.

Positive Galvanic—Interrupted.—Stimulation caused a very slight increase in two trials, while the return rate of flow was the same or less than the control in all but one of ten trials.

Negative Galvanic—Interrupted.—Stimulation caused only a slight increase in two trials, and during the return period only one trial showed a slight increase, the seven others remaining the same or showing a decrease from the control rate of flow.

Positive Galvanic—Constant.—In four trials there was an increase in the rate of flow during stimulation, the other eleven showing either no change or a decrease. The increase was maintained in only one instance following the stimulation.

Negative Galvanic—Constant.—Either no change or a decrease in the rate of flow during stimulation was evident in thirteen of fourteen trials, with the same condition following stimulation for a slight increase in one trial.

9. Hartman, F. A.; Blatz, W. E., and Kilborn, L. G.: J. Physiol. **53**: 92 (Sept.) 1919. Hartman, F. A., and Blatz, W. E.: Ibid. **53**: 290 (Feb.) 1920, **54**: 392 (March) 1921.

COMMENT

The results of these experiments automatically fall into two easily distinguishable groups. In the first group are those methods which, through one or another form of action, increase the blood flow to a noticeable degree; i. e., heat, massage and passive motion. Heat causes a gradual increase until a peak is reached; it maintains this for a variable period of time and then gradually decreases even though the heat may continue to be applied. This must be due to an active dilatation of the blood vessels. Whether the dilatation is a reflex mechanism due to skin stimulation or to a direct effect on the blood vessels one cannot determine, but the problem should be investigated from that point of view. The later decrease in the rate of flow is apparently due to a paralytic dilatation from overstimulation.

Massage and passive motion, while they both also produce an increase, differ in manner from heat but are similar to each other. They cause a great initial increase with a fairly rapid decrease to a rate less than normal even before the end of stimulation. This appears to be purely a mechanical action, the initial rise being due to a forced evacuation of the blood vessels which is so complete that the blood flow seems to stop by the end of the manipulation. Immediately following the cessation of the procedure the blood flow slowly returns to normal since it must not only resume flow but also fill the evacuated and compressed blood vessels. The actual volume of blood, therefore, which passes through the limb during the period of stimulation and recovery is not actually greater than normal, but there is a more complete emptying for a short period of time, and therefore a greater supply of fresh blood is brought to the part.

The second group, which includes all the forms of electrical treatment used, was inconsistent in effecting changes in the rate of flow. Only occasionally, if an interrupted galvanic or sinusoidal current stronger than could be clinically used was applied and vigorous contractions thereby attained, was the result even approximately the same as that obtained by the use of massage and passive motion. Apparently, then, it is the contraction per se, regardless of how induced, that causes a mechanical change in the blood flow. If the electrical current were capable of causing any marked changes in the size of the blood vessels, these would be manifest whether or not contractions were elicited. Furthermore, if the electrical current were the deciding factor the constant current should have shown a greater effect than either of the other currents, whereas in reality it was least effective. Criticism might be made of the use of the constant galvanic current over such periods of time, but it must be remembered that an attempt was being made to determine the effect of the electrical current per se, and this should be manifest almost immediately. If the current had been applied over a longer period of time the results would have been due to the effect of the heat generated as well as that of the current, and one could not then be separated from the other.

Clinically heat and massage have always been used together, the combination seeming to prove of greater value than either used alone. It appears, then, that here is possibly the explanation for the efficacy of this combined therapy. Heat produces a dilatation with some increase in the rate of flow; then by massage and passive motion these vessels are completely emptied mechanically, with a removal of stagnant cells and the products of catabolism, allowing a complete change of the blood supply to take place. Electrical stimulation may do this to a slight degree, but to get a contraction which would produce a mechanical effect as great as that obtained by passive motion or massage would require a current greater than could be pleasantly borne by the skin. However, electrical stimulation may have a value that does not lie in its effect on blood flow, and in the further studies on these procedures the attempt will be made to determine what this is.

Further, these experiments not only confirm the value of the combined therapy but also suggest that shorter periods of massage and passive motion more frequently used would be of greater value than a long continued application. Unless this is done, the blood vessels having been emptied, nothing is accomplished by the procedure until they have been completely refilled and the new supply of blood allowed time to have accomplished its function.

CONCLUSIONS

1. The effect of certain physical therapeutic procedures on the blood flow of a normal limb was studied.
2. Heat produces an increased blood supply due to active dilatation of the blood vessels.
3. Massage and passive motion by mechanically emptying the blood vessels cause a temporary increase in the rate of flow.
4. Electricity, as applied, is ineffective in increasing the blood flow. Its value in the treatment of poliomyelitis and peripheral nerve injuries may be due to some other effects not studied in these experiments.
5. A suggestion is made to use more frequent but shorter treatments of massage and passive motion.
6. These observations should be of value as a basis of study of the physiology of the denervated muscle.

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HEMORRHAGIC ENCEPHALITIS AFTER NEOARSPHENAMINE

REPORT OF CASE WITH FAT EMBOLISM FOUND AT NECROPSY *

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Since 1911, only two years after the introduction of arsphenamine in the treatment of syphilis by Ehrlich, descriptions of purpura following the injection of this drug have appeared in the literature. A type of purpura which was fatal in most instances, and which was characterized by hemorrhages into the brain, was first described by Fischer,[1] Almkvist,[2] Milian [3] and others under the name of hemorrhagic encephalitis. Some referred to it as serous apoplexy. Since that time, reports of this reaction have appeared much more frequently in European than in American literature. Dr. J. Earle Moore [4] of Baltimore has informed us that to his knowledge no such case occurred in the American Expeditionary Forces during the World War, although

* From the University of Georgia Medical Department.

1. Fischer, B.: Ueber einen Todesfall durch Encephalitis haemorrhagica im Auschluss an eine Salvarsaninjektion, München. med. Wchnschr. **58**: 1803, 1911.
2. Almkvist, J.: Ein Fall von Encephalitis haemorrhagica acuta nach intravenöser Salvarsaninjektion, München. med. Wchnschr. **58**: 1809, 1911.
3. Milian, G.: Accidents cérébraux et reaction d'Herxheimer, Bull. Soc. franç. de dermat. et syph. **23**: 169-173, 1912.
4. Moore, J. E.: Personal communication to the authors.

French experts had led him to believe that it was common among French troops. Testifying to its rare incidence in this country, this expert has said that in an experience with the various arsphenamine preparations comprising 200,000 injections into 15,000 patients he had never seen a case of hemorrhagic encephalitis due to any of them. Quoting the Meirowsky statistics, Dr. John H. Stokes [5] has stated that this condition has been responsible for half of all so-called arsphenamine deaths. He described a case occurring after neoarsphenamine which was the only one that occurred in an experience with 63,000 injections.

As to etiology, several explanations have been suggested. Ehrlich [6] thought it occurred on account of a deficiency of epinephrine in the blood of the patient at the time of the fatal injection. Milian [7] in 1913 had published previously his success in the treatment of many postarsphenamine reactions with epinephrine. Stokes [5] has mentioned alcoholic excess as a predisposing factor. However, while their cause is not definitely known there does seem to be some agreement as to their clinical manifestations and pathology.

Clinically, hemorrhagic encephalitis is characterized by the sudden appearance of a severe headache with vertigo and marked excitation. There may be vomiting or loss of sphincter control. The excitation may progress to a state of delirium, to be followed in a few hours by the gradual onset of deep coma. Death usually occurs in one or two days. This syndrome may appear several days after injection, at which time the onset is more insidious and is quite likely to be confused with alcoholic excess or the more common forms of cerebral vascular accident. The British Medical Research Council, as quoted by Phelps,[8] was of the opinion that it appeared more frequently within two to five days after the arsphenamine injection. However, the case reported by Phelps with necropsy was one of sudden onset, with death occurring one hour after injection. Feldman and Bratzlavsky,[9] in a more recent study of these complications, stated that they appear suddenly after the second or third injection without any prodromes. At the same time they reported a case with recovery from a reaction that had all the clinical characteristics of hemorrhagic encephalitis. Beeson,[10] McBride [11] and several others have reported similar cases with recovery. Anatomically this condition is manifested by edema of the brain and small hemorrhages throughout its substance. Similar changes may be found in the spinal cord, skin, pericardium and other viscera. The hemorrhages may be petechial but may be larger in area. The location of the larger hemorrhages, that is, whether into the skin or the brain, may be the only criterion whereby these reactions have been classified as purpura hemorrhagica or encephalitis.

In our case, besides the lesions associated with hemorrhage, two other extraordinary features presented themselves at necropsy. The erythrocytes as seen in many of the capillaries were found to resemble in every detail those of sickle cell anemia. Previous work done at this clinic by Dr. V. P. Sydenstricker,[12] in a study of eighty patients with this condition, has shown that these characteristic changes in the erythrocytes predispose them to hemolysis and p agocytosis. We are not prepared to make any statement regarding the part, if any, that this anemia might have played in the production of this reaction. Some of the patients discussed by Sydenstricker had syphilis, but no record of arsphenamine treatment of any of them could be found. One of his patients had a spontaneous cerebral hemorrhage.

The second and even more interesting observation in our case was that widespread distribution of fat in the capillaries was noticed in all tissue examined. Here, then, was a case of fat embolism occurring after neoarsphenamine in a patient with the clinicopathologic syndrome that has been designated as hemorrhagic encephalitis. No source of the fat could be determined. Our patient was lactating, and a few minutes before the fatal injection the tissue around the right elbow had been injured slightly by extravasation of the injected drug from an unsuccessful venipuncture by one of our assistants. Comparisons with many other cases of fat embolism as described by Warthin,[13] Elting and Martin,[14] Gauss [15] and others revealed a striking resemblance to our patient. The resemblance does not end at the anatomic condition. Descriptions of the clinical manifestations and types of death are so much alike that they may be given for both of these conditions. This similarity has suggested that possibly the amount and condition of the circulating fat at the time of injection might have a great deal more influence on the occurrence of these reactions than we have considered. We are presenting this unfortunate case now in the hope that it may lead to a little better understanding of this problem. We have mentioned the rare occurrence of such cases particularly for the benefit of those clinicians who, in spite of the benefits produced by the arsphenamines, are actually afraid to use them because of the occasional fatal reaction.

REPORT OF CASE

A Negro woman, aged 20, seen at the obstetric clinic of the outpatient department of the University of Georgia Hospital, Feb. 3, 1930, was in her second pregnancy at about the fourth month. The blood pressure was 135 systolic and 70 diastolic, and general physical examination did not reveal any abnormality. Her first pregnancy had terminated as a miscarriage at about the fourth month, one year before the present admission. The serum Wasserman reaction was four plus, and she was referred to the syphilis division of the medical clinic. However, she did not return to the clinic until March 8. On this date she gave a history of a genital sore in 1923. She stated that she had not had any skin eruption or alopecia. There were no signs of syphilis on examination, and in view of the history it was felt that her infection was one of rather long duration. Accordingly, she was classified as having a case of latent syphilis, and treatment was instituted in the form of a preliminary course of bismuth salicylate in doses of 0.13 Gm. at weekly intervals for six doses. Neoarsphenamine was administered first, May 27, in a dosage of 0.45 Gm. She then received this drug in a dosage of 0.6 Gm. for three more weekly injections. July 15, she was delivered at term of a healthy looking baby. She returned to the syphilis clinic, September 19, to continue treatment, and was given neoarsphenamine, 0.6 Gm.

5. Stokes, J. H.: Modern Clinical Syphilology, Philadelphia, W. B. Saunders Company, 1926, p. 348.
6. Ehrlich, Paul: Deaths After Salvarsan: Encephalitis Hemorrhagica, Brit. M. J. **1**: 1044, 1914.
7. Milian, G.: L'adrenaline antagoniste du salvarsan, Bull. Soc. franç. de dermat. et syph. **24**: 436-454, 1913.
8. Phelps, J. R.: A Fatal Case of Acute Poisoning by Neoarsphenamine, U. S. Nav. M. Bull. **22**: 217 (Feb.) 1925.
9. Feldman, A. A., and Bratzlavsky, J. P.: Contribution to the Study of Postsalvarsan Nervous Lesions, Ann. d. mal. vén. **25**: 1-16 (Jan.) 1930.
10. Beeson, B. B.: Arsphenamine and Neoarsphenamine plus Adrenalin, Am. J. Syph. **3**: 129 (Jan.) 1919.
11. McBride, R. H.: Treatment of Arsphenamine "Encephalitis" with Sodium Thiosulphate, J. A. M. A. **84**: 729 (March 7) 1925.
12. Sydenstricker, V. P.: Sickle Cell Anemia, J. A. M. A. **83**: 12-17 (July 5) 1924.
13. Warthin, A. S.: Traumatic Lipaemia and Fatty Embolism, Internat. Clinics **4**: 171, 1913.
14. Elting, A. W., and Martin, C. E.: Fat Embolism, Ann. Surg. **82**: 336-353 (Sept.) 1925.
15. Gauss, Harry: Studies in Cerebral Fat Embolism, Arch. Int. Med. **18**: 76 (July) 1916.

This was well tolerated and on September 26 a similar dose of this drug was given.

She became moderately upset when an assistant failed to make a successful venipuncture. The vein was entered easily a few minutes later and the full dose of the drug mixed in 10 cc. of water was injected over a period of about thirty seconds. Almost immediately she complained of feeling weak and of a choking sensation, but got up and walked toward the door of the treatment room. At this time, about two minutes after the injection, she suddenly screamed, complained of a backache, and would have fallen to the floor if she had been allowed. She was placed on a cot in an emergency room and at this time appeared excited and said that she wanted to defecate. The pulse was very weak and while one of us left the room to get some epinephrine she had an involuntary bowel movement. Epinephrine, 1 cc., in 1:1,000 solution was given intramuscularly, and after about fifteen minutes the patient felt much better. She was kept in the emergency room, however, for about an hour longer, after which time she walked out of the building and went to her home.

Nothing more was heard of her until 8:30 a. m., September 28, when she was admitted to the hospital. She had felt well after her recovery from the reaction at the outpatient department two days before, but on this morning, at about 2 a. m., she suddenly complained of a severe headache, seemed excited and gradually became comatose. On admission to the hospital she could not be aroused. The temperature was 102.2 F., pulse 130, respirations 44 and blood pressure 160 systolic and 125 diastolic. There was clotted blood about the gingival margins. There were a few scattered petechiae on both breasts and a small subcutaneous hemorrhage at the site of venipuncture done Sept. 26, 1930. The deep reflexes were all absent and the extremities were flaccid. Hemoglobin was 90 per cent, red blood cells 5,200,000 and leukocytes 8,400. Lumbar puncture yielded a grossly bloody fluid not under increased pressure. Cisternal puncture done two hours later showed clear fluid with a cell count of 8 and no globulin. Blood nonprotein nitrogen was 37.5 mg. and sugar was 100 mg. Wassermann reactions on both the serum and the spinal fluid were negative.

The patient remained comatose and was anuretic throughout her entire stay in the hospital. Five hundred cc. of 20 per cent dextrose and 0.13 Gm. of sodium thiosulphate were given intravenously. September 29, the temperature rose to 106, and she died without ever regaining consciousness, at 9:40 a. m. Necropsy performed by Dr. Edgar Pund was not done until 6 p. m., September 30, and the following significant observations were made:

The skin was clear with the exception of a little ecchymosis about the venipuncture wounds, and two small petechiae over the left scapula. The visceral pleura on both sides, and the epicardium were studded with petechiae. There were a few petechiae in the myocardium. The liver weighed 1,880 Gm. and the lobulations appeared jumbled. The spleen weighed 230 Gm. and the lymph nodules were barely visible.

Before the brain was cut, a large hemorrhage was seen in the pia arachnoid of the medulla and upper part of the cord. The clot filled the canal and was most marked anteriorly. On section, numerous minute petechiae were seen in the cerebrum, cerebellum, pons and medulla. In the pons and lower part of the medulla, some of the hemorrhages were 4 mm. in diameter. Microscopic examination revealed these hemorrhages and also the fact that the erythrocytes were sickle-shaped. In all the sections of the brain, lungs, heart, liver, spleen, suprarenals, kidneys and pancreas the capillaries were filled with fat. There were focal areas of necrosis in the pancreas.

SUMMARY

A patient with sickle cell anemia died following an injection of neoarsphenamine.

The sudden appearance of a severe headache, vertigo, excitation and rapidly developing coma relegates this patient to the group of cases described as so-called hemorrhagic encephalitis.

At necropsy, multiple hemorrhages into the brain and other viscera were seen.

Microscopic examination of the tissues disclosed the typical finding of fat embolism.

In all cases presenting this syndrome, stains for fat should be done at necropsy.

Southern Finance Building.

CLIMATE IN TUBERCULOSIS AND THE PREVENTION OF RELAPSES

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There have appeared of late many alluring advertisements in the lay and medical press and in circular letters sent directly as first class mail to physicians from various chambers of commerce all praising highly their section of the country and their climate as particularly suited for the tuberculous invalid. On the other hand there have been issued, from individual authorities, official or semiofficial statements emphasizing the importance of judicious home treatment in home climates. It is obvious that it must be bewildering to the lay mind to read such different and seemingly contradictory statements.

Not only the tuberculous individual seeking the best way to cure his disease according to his means, but even the general practitioner, unless he has made phthisiotherapy a special study, may have difficulty in knowing just what is best to do for this disease. Sometimes the family physician, even if he thinks it would be just as well for the patient to remain at home, fearing that it might be thought that ulterior motives prompted him to keep the patient under his care, will send him away to avoid this suspicion.

A fairly long professional life, almost exclusively devoted to the study and practice of the prevention and treatment of tuberculosis, which began with an internship in the Los Angeles County Hospital and which is by no means yet completed for there is always much to learn, may nevertheless enable me to formulate a fairly reasonably accurate idea of the respective value of home treatment in home climates and the benefits that may be derived from the sojourn of the tuberculous invalid in the different climatic resorts as an adjuvant in the cure.

In all of my writings on this subject from the beginning of my career as a tuberculosis worker, starting with the three treatises "Les sanatoria, traitement et prophylaxie de la phtisie pulmonaire," "Pulmonary Tuberculosis, Its Modern Prophylaxis and the Treatment in Special Institutions and at Home," and "Die Tuberkulose als Volkskrankheit und deren Bekämpfung," all three published over thirty years ago, I have maintained that there is no specific climate for tuberculosis and that, if I had to choose between having a patient under special medical supervision with mental and physical rest in his home climate or sending him even to an "ideal" climate where he would merely do as he pleased, I would prefer the former, believing he would have a better chance for recovery. I have not changed my attitude in this respect, and my subsequent studies, visits to many American and European climatic health resorts, and a lengthy experience in private, hospital, sanatorium and consultation practice have led me to the conclusions presented here.

The benefits to be derived from a sojourn in the public sanatoriums, maintained by many states, which must be resorted to by a large number of people, have

been clearly set forth in an official announcement issued, February 8 of this year, by the U. S. Public Health Service. To elucidate whatever value there may be in climate as an additional factor in the treatment of tuberculosis, I venture to suggest in this contribution certain statements that may perhaps serve as maxims in the treatment and in the climatology of tuberculosis.

1. The most important part in the treatment of tuberculosis in any form is "rest"—rest of body and of mind. In pulmonary tuberculosis local rest of the lung may be added to the general rest by restricted or superficial respiration, but always in as pure air as may be obtainable. When the tuberculous lesion is located in any part of the upper lobes, controlled diaphragmatic respiration may be resorted to to give additional local rest to the active processes. With strict medical supervision, or what is best known as the "sanatorium regimen," the treatment may be carried out in the home of the patient. In most homes, however, such a regimen is difficult to install and the hospital or sanatorium gives the best possible chance for the recovery of the invalid.

2. When the sanatorium regimen can be conscientiously carried out, whether in an institution or at home, climatic conditions are of secondary importance; but to deny the beneficial influence of certain climatic regions as a valuable adjuvant in the treatment of tuberculosis is as dangerous and unscientific as the belief in the specific curative quality of any particular climate.

3. A change of climate, though not necessarily a marked one, except in the latest stages of the disease, if of either a pulmonary or a laryngeal character, is nearly always good. While a change from an unfavorable climate to a favorable one, or from a good to a better, must naturally be considered preferable, this rule is by no means inflexible. When the patient has contracted tuberculosis in a favorable climate, a change to another, even to a seemingly less favorable one, may accomplish as much good for this individual as the reverse in others. This fact was particularly impressed on me by the late Prof. Edward G. Janeway, one of the greatest internists and medical teachers of his time.

4. The native locality of the tuberculous must be taken into consideration when making a climatic change. The patient who spent his early youth in Norway or in other parts of northern Europe, or one born in Massachusetts, Maine or northern New York, where the winters are rigorous, will usually do better in such climates as Colorado, Montana, the Adirondacks, and Sullivan or Orange counties of New York offer. The sons and daughters of sunny Italy and American born citizens from the warmer zones will do better in climates such as are to be found in southern California, New Mexico, Arizona, western Texas, North and South Carolina, Virginia, Florida, Bermuda and the Riviera.

5. To the foregoing rule there are exceptions, and besides consideration of nativity one should be guided in a large measure by the patient's personal experience. For example: A cold climate may be selected if the patient has found by experience that he feels more comfortable and less distressed in winter. A change to a warmer climate is indicated when the reverse is the case. When the experience of the patient has demonstrated that he felt better when near the sea coast, or vice versa, this factor must also serve as an indication for his domicile while seeking cure.

6. There exist idiosyncrasies in regard to climatotherapeutics and aerotherapeutics as there exist in regard to hydrotherapeutics, electrotherapeutics and medicinal therapeutics. These idiosyncrasies cannot be discovered beforehand, they can only be learned by experience.

7. High (above 3,000 feet), moderately high (from 1,500 to 3,000) and low altitudes, hot and cold regions, seacoast and ocean climates, prolonged voyages, life on houseboats on rivers and lakes, extreme dryness and moisture have all proved advantageous in numbers of cases.

8. The value of any climate to a tuberculous patient cannot be determined or compared with any other, unless the patient lives under careful medical guidance in a sanatorium or private home and follows the best hygienic and dietetic treatment in both instances.

9. Patients with laryngeal disorders, in the earlier stages with relatively little pulmonary involvement are often benefited by a change to a moderately high and warmer moist climate with between 500 and 1,500 feet of altitude, particularly when there is a chronic feeling of dryness in the throat. When there is a tendency to moist catarrh the extremely dry and hot climates, provided dust storms are not frequent, are often beneficial. In patients with pulmonary tuberculosis, a weak heart, distinctive heart or serious kidney lesions, emphysema, constant fever and extreme nervousness are contraindications to high altitudes. Whenever such pathologic conditions do not exist, some degree of altitude and cold or cool, dust free or at least relatively dust free regions will always prove a valuable adjuvant in the treatment of tuberculosis. Early pulmonary hemorrhage per se need not be considered in determining a choice of climate. However, as a rule, and particularly in patients inclined to frequent hemoptysis, long distance journeys should be made with frequent rests and great altitudes approached only gradually. Not a few patients with slight bronchial symptoms (bronchitis) but weak hearts and evidences of mixed infection do well at the seacoast for the greater part of the year. Prolonged ocean voyages may also prove beneficial in such cases. The patient, however, must not be subject to seasickness, must be fond of the ocean, and be in a situation to travel in comfort and with ease on a relatively slow steamer or large ship with a medical officer on board.

10. The wonderful success of the relatively recent work inaugurated by Rollier of Leysin has demonstrated the value of judicious solar therapy in high alpine-like climates. The gradual exposure to the cold air and actinic and ultraviolet rays of the sun has added greatly to the armamentarium in the treatment of tuberculous bone and joint diseases, particularly in childhood.

11. In so-called contact cases in which the individual has lived in more or less close proximity with the patient suffering from active tuberculosis with bacilli in the sputum, or in cases that are strongly suggestive by reason of slight symptoms of incipience, there is, of course, no need for climatic change. But if at all possible, the patient who is considered infectious should be removed from the environment where he may infect other members of his family, and the suspected case should be carefully watched and the preventive treatment inaugurated.

12. In the choice of locality for the purpose of a climatic change for any patient suffering with a pulmonary or laryngeal lesion, besides the pathologic con-

siderations enumerated in paragraph 9, many factors must be taken into account:

(*a*) If a patient wishes to return to his home after improvement or restoration to health with an arrested or apparently arrested case, may he do so safely or not? Experience has shown that when great climatic changes have been made, patients frequently relapse when returned to their former home.

(*b*) If the patient is married or single, young or old, willing or unwilling to leave: If the patient is subject to nostalgia, and generally much attached to home environments, sending him far away, and particularly if against his wish, may often produce disastrous results, for mental depression retards recovery and aggravates pathologic conditions.

(*c*) If the patient is sanguine and cheerful he will usually do well even at long distances from home in isolated regions under medical care within or outside a sanatorium.

(*d*) For the morose and hypochondriac patient, isolation or long distances away from home have often produced the same result as in the patient with nostalgia.

(*e*) The psychology of the patient regarding the choice of climate is most important. For example, when he has heard of a friend or relative who has been cured in this or that climate and he desires to go there, not to yield to his wishes would probably materially lessen his chances of finding contentment and peace and *ipso facto* retard his recovery. Therefore, when at all compatible with the patient's condition, his wishes concerning climate should be respected.

(*f*) To remove a patient in an advanced and evidently hopeless stage from his home to a long distance is as cruel as it is unscientific, unless it is done at the patient's special request and with the likelihood of obtaining the object in view, to lessen his suffering and make him happier in general. Slight climatic changes with short distances to travel are often beneficial in such far advanced cases when made with the absolute consent of the patient.

(*g*) The patient's financial condition must be such that by his removal to distant localities and his subjecting himself to the hygienic and dietetic treatment in special institutions or health resorts he will not become destitute and a burden to the community that has extended its hospitality to him. His means should be sufficient to avoid all possible anxieties and worry in this respect.

13. When the situation is such that home climate or home treatment must be taken into consideration, one should bear in mind that the patient will do better in the outskirts of the city than in the city; in the higher parts of the locality than in the lower; in a clear or relatively clear, dustless atmosphere than in a dusty one; in a pure, smokeless, or relatively pure and smokeless locality than in one full of smoke and odors; in a locality in which he may get the benefit of whatever sunshine there is than in a valley, canyon or narrow street surrounded by high buildings; where there are few houses than many; where there are relatively few people than where there is overcrowding and where there is little traffic and little noise than the reverse. These conditions always receive due consideration in the selection of locations for public state and county sanatoriums.

14. When tuberculosis has been contracted in what is usually considered a very favorable climate, the patient does not always seem to do so well there. A climatic change then becomes necessary. This fact was impressed on me during my early practice in southern California. I often had occasion to observe that when treating young people born in southern California, particularly in the city of Los Angeles, who contracted tuberculosis, they never seemed to do well at home, but when sent to another region where there were different climatic conditions, even seemingly less favorable, they improved rapidly. The factors which bring about an improvement through a sojourn in a decidedly different though even apparently less favorable climate in tuberculous adults and among elderly people in the East, as suggested by Dr. Janeway in maxim 3, seem to be the same as in these young Californians.

15. The ideal climate for the average patient with pulmonary tuberculosis in the earlier and more hopeful stages of the disease is the one in which the extremes of temperature are not great, with only rare fogs or none at all, with the purest possible atmosphere, with relatively little humidity, with much sunshine, and with all conditions that permit the patient to live comfortably outdoors the greatest number of days out of the year and the greatest number of hours out of the twenty-four. For tuberculosis of the bones and joints and scrofulous diseases of childhood, the seacoast climates in the temperate zones comes nearer to deserving the term "specific" than anything else. The peculiarly beneficial influence of seacoast climate in bone and joint tuberculosis is doubtlessly to be ascribed to the aseptic and ozonic quality of the air and the iodides and other salts suspended therein. But pure air and outdoor life, in whatever locality, can and should be utilized in all the methods of treatment of tuberculosis in old and young and in scrofulous diseases of childhood. There also must be obtained for the patient contentment, peace of mind and an attitude of hopefulness. These are as important as all the physical means in phthisiotherapy.

Volumes have been written on the subject of climate in tuberculosis, from Hippocrates down to the present time, and it would be an herculean task to give the bibliography of climatology in tuberculosis. But I should like to mention the experiences of men who either personally or by their lifelong work have demonstrated the value of climate as an important adjuvant in the treatment of the various forms of tuberculosis, when the patient can afford it and is willing to leave home. Dr. Trudeau had been diagnosed as tuberculous by no less a man than Dr. Edward G. Janeway, who had told him that the upper part of his left lung was involved in an active tuberculous process. Trudeau could have had the best possible home care under the best physicians in New York City, but he went to the Adirondacks, following the example of Brehmer of Goerbersdorf, who had built a sanatorium in the Silesian mountains. Trudeau was an active worker on behalf of the tuberculosis sufferers for over thirty years and lived to the age of 70. He made Saranac Lake one of the greatest health resorts for tuberculous invalids, and under the Adirondack Cottage sanatorium regimen untold numbers of American and Canadian patients were indebted to Trudeau and the invigorating climate of the Adirondacks for their restoration to health. My own chief at the Falkenstein Sanatorium, Geheimrath Dettweiler, who added the rest cure on the reclining chair to the institutional and climatic treatment and who cured himself of tuberculosis and, like Trudeau, cured hundreds of cases, chose the elevated Taunus region for his "Heilanstalt." Lastly, my French teacher Professor Grancher, himself tuberculous, advised his tuberculous pupil Sabourin to estab-

lish the sanatorium at Canigou in the mountains of the Oriental Pyrenees. Solly of Denver, Minor of Asheville, N. C., King of Loomis, N. Y., and many other physicians, personally known to me, who were themselves tuberculous, ascribed their recovery to the combination of climate and the hygienic and dietetic treatment.

Such men who have given us the benefit of their personal experience through suffering and their observations in phthisiotherapy I revere as my teachers and inspirers, and I feel an equally great admiration and gratitude for the men like Biggs, Bowditch and Osler, who taught the value of home climate and home treatment. But even the latter three, all one time presidents of the National Tuberculosis Association, appreciated the value of certain climates as an important adjuvant in the treatment of tuberculosis.

I am sure that the many American phthisiotherapeutists now practicing in the various health resorts and the great majority of physicians who make tuberculosis their specialty will agree with me in the essentials of the maxims I have set forth.

In the selection of sites for state sanatoriums, the highest and supposedly most salubrious regions have been chosen for their establishment. The same policy I am glad to state has been followed in choosing the localities for the tuberculosis War Veterans' hospitals. The United States Military Tuberculosis Hospital was started at Fort Bayard, now War Veterans' Hospital, No. 55, and the United States Marine Hospital, under the direction of the U. S. Public Health Service, is located at Fort Stanton. Both institutions are in New Mexico. Fitzsimons General Hospital of the U. S. Army, which is taking care of more than 1,000 tuberculous soldiers and war veterans, is located at Denver.

In conclusion I will say a word concerning my personal observations regarding climatology in tuberculosis. As an intern in the Los Angeles County Hospital many years ago, when that now great metropolis still had the air of a little Spanish town with about 80,000 inhabitants, three of my five wards were occupied by consumptive patients. They had come to Los Angeles with little or no means, having heard that the "glorious climate of California" would suffice to cure them. Instead of that, after their slender means had been exhausted they landed at the county hospital in the more or less advanced stages of tuberculosis to finish their days in that institution. It was there that I had the first lesson in the fallacy of sending patients to distant "ideal climates" when they have insufficient means and are unable to carry out the hygienic and dietetic regimen.

After graduation from Bellevue I returned to California and entered private practice in Los Angeles, and to my satisfaction I observed that the well-to-do patients in the early and even moderately advanced stages did remarkably well when they were under careful medical supervision, had plenty of good food and care, and lived the greater part of the time outdoors.

In the many years of labor in the tuberculosis clinics and hospitals of the New York Health Department I learned to appreciate the value of proper environments in phthisiotherapy. At the Riverside Hospital, located on North Brother Island, where we received the tuberculous poor in all stages of the disease when they constituted a danger to their families, I noticed an almost immediate improvement in the condition of such patients after their removal from lower east or lower west side tenements into clean beds in hospital wards. In such cases, not climate but better air and environment were responsible for the improvement.

In spite of official statements in the newspapers that relatively little importance is to be attached to a climatic change, one should not blind oneself to the fact that climate constitutes a valuable therapeutic adjuvant in phthisiotherapy if wisely chosen, and one must also be fair to one's colleagues in private practice in climatic health resorts or sanatoriums who are sincere and honest in their reports proving the value of climate as a help in the cure of tuberculosis. I am not a member of the Climatological Society and am not, of course, interested in any private sanatoriums or health resorts reputed as being particularly suitable for the treatment of tuberculous invalids.

At present, especially, one must not forget that public hospitals and sanatoriums are filled to capacity and that there are large waiting lists. Dr. Linsly R. Williams, last year's president of the National Tuberculosis Association and now president of the New York Tuberculosis and Health Association, made the statement recently that there are 50,000 people in New York City alone who have tuberculosis, and that at least 15,000 of them do not know that they have it or do not know what to do about it. According to a recent statement by Dr. Ray Lyman Wilbur, chairman of the Committee on the Cost of Medical Care, in the United States there are 700,000 persons sick with tuberculosis at any one time. How many of these should or could avail themselves of climatic treatment under sanatorium regimen I, for one, would not venture to estimate.

Perhaps some well-to-do patient now recovering from tuberculosis in one of these health resorts or sanatoriums, or some of his wealthy friends, may wish to extend the opportunity of climatic treatment under medical supervision to some tuberculous veteran or civilian sufferer who is now waiting for a vacancy in a hospital or sanatorium. What a splendid opportunity this offers for doing good and helping to relieve the present sad condition that many tuberculosis sufferers are experiencing as a result of the general economic depression. National and local tuberculosis associations would, I am sure, gladly help in recommending the most deserving invalid for such good fortune.

While the conscientious and well educated practitioner would probably not be affected by any published statements minimizing climate as an adjuvant in the cure of tuberculosis and would continue to use his best judgment as to whether or not his patient would do better if a climatic change were added to the usual treatment, there may be occasionally less conscientious and less ethical physicians, and there are certainly any number of irregular practitioners following this or that cult, who will try to keep the patient at home for pecuniary gain, regardless of the evident need of a climatic change or sanatorium treatment. There are, as all know, men and women who call themselves doctors of this and that particular ism, and practitioners of religious cults, who will base their action in retaining the patient at home on the statement that climate or institutional treatment is of little or no importance in tuberculosis.

In the excellent announcement issued by the U. S. Public Health Service under the heading "Climate and Tuberculosis," the closing paragraph contains the following important conclusions:

A radical change in the habits of the individual is often necessary. That is why he should go for the first six months to a nearby sanatorium. There the chief business is getting

well. He lends himself to the routine of rest and more rest, asleep and awake, freely flowing air night and day, good food, proper food habits, and the other elements of sanatorium life. He learns to "play the game," and after graduation from a sanatorium he is a safe risk for his physician to treat.

The only serious question that arises in my mind on reading this statement is: "In how many cases will these six months suffice to prevent a relapse?" The average stay of a tuberculous patient in veterans' hospitals is one year. This is longer than the average stay permitted in public civilian hospitals, from which patients are usually discharged after six months or so, either as arrested cases or as those who have obtained the maximum benefit from hospitalization. The tuberculosis experts attached to the Veterans' Bureau will bear me out when I say that in many cases even one year is not enough to accomplish a cure, and the physician in civilian practice well knows of the frequent relapses that occur in patients discharged from public sanatoriums and hospitals. Neither the authorities of the veterans' hospitals nor those of public sanatoriums can be blamed for this unfortunate situation for, as already stated, there are not enough institutions either for the tuberculous war veterans or for the tuberculous civilians who cannot afford a private sanatorium or health resort treatment.

What seems to be as important as the multiplication of institutions for the treatment of tuberculosis is the creation of some intermediate or convalescent stations to prevent the frequent relapses among tuberculous patients, arrested, apparently arrested or economically cured (that is to say, sufficiently restored to assume their former or other occupations to support themselves or their families). These would provide a systematic postsanatorium treatment for all such patients after their discharge. An institution located in or near the same climate to which the patient intends to return would of course be ideal. Here the one-time patient, with the aid of careful hydrotherapy, should learn the value of cold water ablutions or douches as a means to strengthen his system against colds. Respiratory therapy, in the purest air obtainable, first of the diaphragmatic and then of the thoracic type, should be instituted to benefit the patient's pulmonary function. Massage and graduated work therapy will be the means employed to overcome the weakened, flabby condition of the muscular system which is a natural result of the prolonged rest cure.

I am firmly convinced that if such convalescent stations could be established in sufficient numbers there would be fewer relapses, and *ipso facto* the morbidity and mortality of tuberculosis would be greatly decreased.

Hope for the eradication of tuberculosis in the present state of social life lies in its prevention by education in hygienic living, better housing of the laboring classes, prevention of undernourishment, particularly in times of unemployment and general business depression, more universal prenatal and postnatal care, abolition of child labor, the treatment of bone and joint tuberculosis in children in seaside sanatoriums or institutions at high altitudes where heliotherapy and aerotherapy can be carried out most successfully, preventoriums for predisposed children, periodic health examinations for the early discovery of pulmonary tuberculosis in old and young, and the treatment of all tuberculous cases at the right time and at the right place. If to this can be added some preventive inoculation or curative serum on which so many of the American and European research scientists are now at work, so much sooner may mankind be freed from the appearance in its midst of the Great White Plague.

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FUNCTION OF THE ROUND WINDOW

AN EXPERIMENTAL STUDY *

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A method is described in the report of Wever and Bray [1] that is accurate and reliable and makes it possible for the first time to study the effect of experimental lesions of the sound transmitting apparatus in animals. Cats were used by us because of the simplicity of the required cerebellar approach and the ease with which the middle ear may be exposed without injury to the tympanic membrane or ossicles. The experimental procedure consists of placing an electrode on or near the auditory nerve and grounding the other electrode in the muscles of the neck. Wires connected to these electrodes lead to a six-tube amplifier in another part of the building. Spoken words and pure tones from various instruments are transmitted by the animal's middle ear to the nerve, causing either a change in potential or modifying in some way the circuit leading to the amplifier.[2] If a telephone receiver or a loud speaker is connected with the output of the amplifier, the words or sounds produced at the animal's ear are heard with great clarity and distinctness.

During the past three months we have made seventy-five sacrifice experiments and, in addition, a considerable number of animals were operated on with full surgical technic and saved for observation of the effect of chronic lesions. Many points of physiologic interest have been noted.

Our observations may be grouped under three general headings:

1. Experimental lesions in the middle ear that have *no appreciable effect* on the transmission of sound, such as puncture of the drum or filling the niche of the round window with wax or plaster.

2. Experimental lesions in the middle ear that *decrease* the transmission of sound—particularly those of lower frequencies—such as fixation of the ossicular chain, division of one of the ossicular joints, or interfering with the movements of the head of the malleus.

3. Experimental lesions in the middle ear that *increase* the volume and clarity of the spoken voice and pure tones.

The present brief report deals with a procedure that increases the transmission of sound not only through the ear of a normal animal but through one in which transmission had already been markedly reduced by experimental lesions. Ether anesthesia is used in all experiments. The technical details of the procedure will be described in a report which will appear shortly.

In all experiments the electrodes are first placed in the proper position and then a series of test words and

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1. Wever, E. G., and Bray, C. W.: The Nature of Acoustic Response: The Relation Between Sound Frequency and Frequency of Impulses in the Auditory Nerve, J. Exper. Psychol. **13**: 5 (Oct.) 1930.

2. Adrian, E. D.: The Microphonic Action of the Cochlea: Wever and Bray's Experiments, J. Physiol. **71**: xxviii (April 24) 1931.

pure tones are tried in order to establish a "normal" for the transmission of sound in each animal. The clarity and intensity of the sounds produced are estimated and charted by an assistant in the receiving room. Some lesion is then made which interferes mechanically with the middle ear structures. The same test words and sounds are repeated and these compared with the normal. It is possible in this way to determine the effect on sound transmission of a great variety of lesions of the tympanic membrane, ossicles, tensor tympani and stapedius muscles, round window membrane and variations of intralabyrinthine pressure.

In our earlier experiments on the round window it was found that a rupture or puncture of the secondary tympanic membrane resulted in a great loss in the transmission of all sounds. It has been generally believed that an increase in intralabyrinthine pressure interferes with normal hearing. Within the limits of this experimental method, however, the opposite effect is invariably produced. In a series of twenty animals we have demonstrated that pressure on the round window membrane always results in a marked improvement in the transmission of the voice and all other tones from the 512 double vibration fork to the higher pitches of the Galton whistle. Up to the present time we have not used precision instruments to measure the sound entering the animal's ear or that issuing from the loud speaker after amplification. However, the accuracy of the observations made in the amplifying room has been checked repeatedly and seems practically incontestable. We are convinced, therefore, that the round window membrane acts as a safety valve for the inner ear structures and by its mobility effects approximately a 50 per cent absorption of all sound entering the ear. If the membrane is made rigid by pressing on it with a plug of moist cotton, the perception of spoken words and practically all tones is increased at least 50 per cent. There is apparently an optimum pressure at which this increase in sound transmission reaches its highest point. Experiments designed to measure accurately the pressure exerted and the percentage increase of sound transmission are being undertaken at the present time.

If the pressure on the round window membrane is removed while one is counting or reciting a series of words, the volume and clarity of the sounds coming from the loud speaker immediately decrease. When pressure is again applied, the sounds immediately become loud and clear. This procedure may be repeated almost indefinitely, or, as has been done in two experiments, maintained for a period of from thirty to forty-five minutes with no diminution of the improved transmission. This improvement occurs even when the ossicles and tympanic membrane are removed, provided the foot-plate of the stapes is intact. In other words, transmission of sound is increased whether the animal's ear is normal or pathologic. In two of our experimental animals a chronic adhesive process was found at operation and the effect produced by pressure was exactly as described. As indicated, simple blocking of the round window with cement, without pressure on the membrane, has no appreciable effect on sound transmission.

CONCLUSION

In the experiments described, pressure applied on the round window membrane of the anesthetized cat increases the clarity and volume of the spoken voice and practically all pure tones between 512 and 4,096. This phenomenon occurs equally well in normal and in pathologic ears. The secondary tympanic membrane apparently acts as a safety valve to protect the structures of the inner ear and, owing to its mobility, absorbs a large percentage of the sound impulses that reach the cochlea.

LOSS OF VIRICIDAL PROPERTY IN SERUMS FROM PATIENTS WITH HERPES AND ENCEPHALITIS *

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We [1] have elsewhere discussed the possible relationship that may exist between the relatively common skin disease known as herpes simplex and human epidemic encephalitis. Herpes simplex is definitely due to a filtrable virus that produces either a characteristic skin eruption or a fatal encephalitis in rabbits and in guinea-pigs. Herpes virus has rarely been found in the brain of human beings dead of encephalitis, and its presence there in those exceptional instances described by Levaditi and Harvier,[2] Doerr and Schnabel,[3] Perdrau [4] and others might well be due to the secondary invasion of a virus that is recognized to be widely distributed under normal conditions. On the other hand, the absence of the virus in the many instances of encephalitis in which it was sought may be due to a process of autosterilization, to the fact that most brains were not examined during the acute phase of the disease, and perhaps also to the fact that tests have been made in animals in nearly all instances by brain inoculation alone rather than by intradermal test as well.[5] We have already given extended reasons for our belief that the Levaditi hypothesis of the etiology of encephalitis as caused by a neurotropic herpes virus has at present the greatest heuristic value.

Comparative Neutralizing Power of Various Serums for Herpes Virus

			Cases from Which Serum Neutralized Herpes Virus	
	Control Serums	Number of Cases	Number	Per Cent
	Wassermann +.....	23	20	87
	Wassermann —.....	17	15	88
Group 2	Herpes			
	Primary acute.....	9	4	44
	Recurrent acute.....	7	5	70
Group 3	Chronic encephalitis.....	42	23	54
Group 4	Acute encephalitis.....	13	2	15

Several attempts have been made to show whether the serum of a patient suffering from encephalitis differs from normal serum in respect to neutralization of herpes virus. Levaditi and Harvier found that the serums of three patients convalescing from encaphalitis failed to neutralize the virus. It is now generally

* Aided by the Willis D. Wood and the Matheson funds for the study of encephalitis.

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1. Gay, F. P., and Holden, Margaret: J. Infect. Dis. **45**: 415-434 (Dec.) 1929.
2. Levaditi, C., and Harvier, P.: Compt. rend. Soc. de biol. **83**: 385, 1920.
3. Doerr, R., and Schnabel, A.: Ztschr. f. Hyg. u. Infektionskr. **94**: 29, 1921.
4. Perdrau, J. R.: Brit. J. Exper. Path. **6**: 41 (April) 1925.
5. This last suggestion is based on our hitherto unpublished finding of a virus in the brains of two patients with human encephalitis following measles which produced the skin lesions of herpes in rabbits but were harmless intracerebrally.

recognized[6] that the majority of normal serums do neutralize herpes virus. Flexner and Amoss[7] seemed to think that there was some indication in their work that convalescent serum fails to neutralize. Zinsser and Tang,[8] on the other hand, found convalescent serums more frequently neutralizing than those of normal adults. We believe that the uncertainty expressed by previous authors has been due to the limited number of cases studied, to a failure to compare serums during the acute stage of encephalitis as contrasted with serums of chronic encephalitis with those of control conditions, and particularly, except in the study of Andrewes and Carmichael, with the serums of individuals suffering from herpes.

We have been able to study human serums as regards neutralizing power on herpes virus from more carefully chosen groups during the past two years. The neutralizing power of each serum has been tested by mixing it with equal amounts of a 20 per cent virus supernatant emulsion which, after contact at 37 C. for one and a half hours, was either injected in the foramen magnum (0.4 cc., equivalent to 500 lethal doses), or intradermally when a good dermatropic strain of virus was available. In many instances both methods were employed and found to check.

By this method we have tested control serums from patients in the ward and dispensary in the Presbyterian Hospital that were sent us for the Wassermann test. No cases suspected of herpes or encephalitis were included in this group (group 1). With these were compared serums from both primary and recurrent herpes simplex taken during the acute phase and kindly procured for us by several staff members of the department of medicine and particularly by Dr. J. G. Hopkins of the Department of Dermatology (group 2).

In group 3 are included tests with the serums of a considerable number of cases of "chronic encephalitis syndrome." The results in a necessarily limited number of cases of acute epidemic encephalitis are given as group 4. The serums from the two latter groups and the accompanying diagnosis we owe to the courtesy of our fellow members of the Matheson Encephalitis Commission and particularly to its clinical chief, Dr. Frederick Tilney.

The relative neutralizing powers for herpes virus of the serums from these different conditions are recorded in the accompanying table.

A comparison of these results would seem to indicate that the usual neutralizing action of normal human serum on herpes virus is slightly reduced on the average in herpes that is recurrent, and distinctly reduced during a primary attack of the disease.

The serums from acute instances of epidemic encephalitis, although limited in number, show in a large percentage of instances loss of their power to neutralize herpes virus. This loss of neutralizing power occurs less frequently in chronic instances of the disease although they are still in marked contrast with control cases. These results would seem to indicate a relationship between epidemic encephalitis and herpes simplex and may offer a presumptive diagnostic test for the former somewhat obscure disease.

630 West One Hundred and Sixty-Eighth Street.

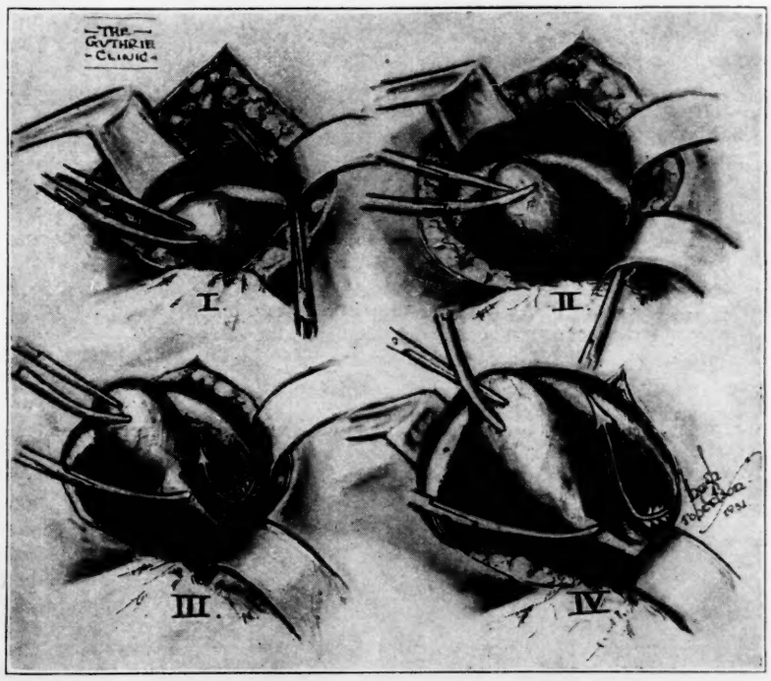
6. Andrewes, C. H., and Carmichael, E. A.: Lancet **1**: 857 (April 19) 1930.
7. Flexner, Simon; and Amoss, Harold: J. Exper. Med. **41**: 215, 233 (Feb.), 357 (March) 1925.
8. Zinsser, Hans; and Tang, F. F.: J. Immunol. **17**: 343 (Oct.) 1929.

Clinical Notes, Suggestions, and New Instruments

THE VALUE OF INTERMITTENT TRACTION IN SPINAL ANESTHESIA *

DONALD GUTHRIE, M.D., SAYRE, PA.

Any surgeon with experience in abdominal operations performed under spinal anesthesia knows that downward traction on the liver or on the stomach, of a sufficient degree to give adequate exposure to the common duct or to the lesser curvature of the stomach, is wont to cause an uncontrollable vomiting reflex.



Intermittent traction: *I*, forceps applied to gallbladder; patient strains. *II*, exposure retained by gentle traction on forceps. *III*, patient strains; position held by traction. *IV*, patient strains again; excellent exposure results.

This reflex is accompanied by great discomfort in the epigastrium and is annoying to the patient, in that it produces mental distress as well as physical discomfort. This adds much to the operative difficulties.

During the past two years, we have employed in our clinic a method of intermittent traction in which the patient aids materially in obtaining the required exposure, by periods of straining, or blowing under compression. By this method we have been able almost to abolish this annoying traction reflex.

For exposure of the gallbladder and liver duct, forceps are placed on the fundus of the gallbladder and the patient is asked to strain or blow under compression. The liver descends into the wound and is held in this new position by traction on the forceps. After an interval of a few minutes to allow the diaphragm to accommodate itself to the new position of the liver, during which time the patient is asked to breathe naturally and is encouraged by the right kind of suggestion, he is again asked to strain or blow. The liver descends farther down into the wound. Time is again taken out for the patient to breathe normally under this change in position of the liver and again he

* From the Guthrie Clinic.

is asked to strain. This third attempt by the patient generally brings the liver so far down into the wound as to make possible its rotation outward, giving complete exposure to the gallbladder and the common duct.

The same technic is used to expose the lesser curvature of the stomach by downward intermittent traction on the transverse colon and the transverse mesocolon.

I should like to emphasize the importance of not employing too much traction at any one time and of waiting long enough during the time-out periods so that the diaphragm may accommodate itself to the new position of the liver or the stomach.

ROENTGEN CARCINOMA AND SARCOMA OF MAN WITH REPORT OF A CASE

FREDERICK W. MULSOW, M.D., CEDAR RAPIDS, IOWA

It is well known that repeated roentgen injuries of man may be followed by carcinoma. It has been stated by Cole[1] that more than 100 cases of roentgen carcinoma have been reported. Rowntree[2] was unable to produce carcinoma experimentally in animals with the x-rays. It is by observing malignant tumors following roentgen injuries of man that one has the best of experimentally produced tumors. For this reason all such cases occurring in man should be recorded.

There are few reports of sarcoma following roentgen injuries, although sarcoma has been produced experimentally by the x-rays.[3] Most of the cases of sarcoma following roentgen injuries have been found associated with chronic inflammatory conditions, such as lupus, tuberculosis or carcinoma, which had been treated by the x-rays. Since sarcoma is known to follow chronic inflammation at times, it is difficult to determine whether the x-rays or the chronic inflammation is the exciting factor in such cases. Among fifteen cases of roentgen sarcoma reported, Alius[4] accepted three as true roentgen sarcomas.

The occurrence of carcinoma and sarcoma in the same individual following frequent exposure to the x-rays is not common.

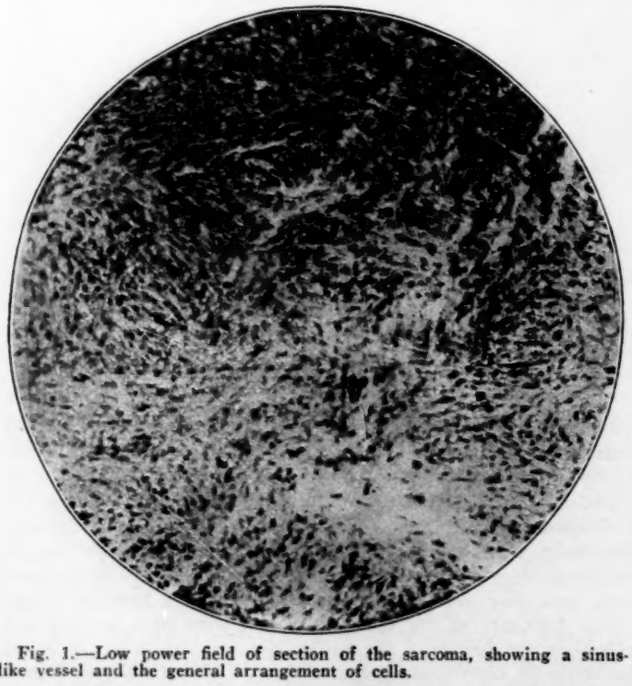


Fig. 1.—Low power field of section of the sarcoma, showing a sinus-like vessel and the general arrangement of cells.

To find sarcoma developing on one finger and carcinoma a few months later on another finger is quite unusual. The case I report is of this type, and, as might be expected, the sarcoma appeared earlier.

A physician, aged 57, had been using the x-rays for diagnostic purposes for about twelve years. Three years before I saw him new tubes and other new parts of his x-ray machine were installed. Following this, considerable fluoroscopic work was done, and his left hand was burned quite badly. A previous moderate dermatitis soon became worse. About two years before, a reddish warty growth appeared on the dorsum of the

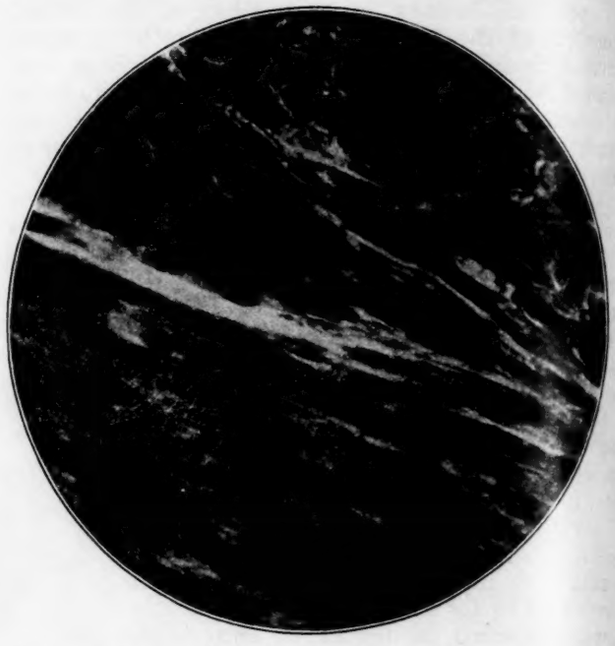


Fig. 2.—High power field of the sarcoma, showing the structure of the cells.

index finger. In a few months it had grown to about 1 inch (2.5 cm.) across. A small piece from this growth was examined at a well known clinic and the diagnosis was sarcoma. A few weeks later the index finger was removed by his surgeon with the following observations:

On the dorsum of the index finger was a tumor 3 cm. long by 2 cm. wide by 1.5 cm. thick. This growth extended from the base of the nail to the joint between the middle and the proximal phalanges. The tumor was somewhat nodular, flesh colored and rather smooth on the dorsal surface but rough and wartlike along the margins. The remaining skin of the dorsum of the finger was thickened and showed a chronic dermatitis. The tumor appeared quite vascular and the surface made by cutting appeared uniform throughout.

Microscopically it consisted chiefly of large spindle-shaped cells. These cells contained a pale oval nucleus. There were a few sinus-like spaces and moderate numbers of capillaries. There was but little intercellular material and a few round cells infiltrated the tissue spaces.

The diagnosis was fibrosarcoma. Such a growth found under any other condition would be called sarcoma without any question. There has been no recurrence since the removal of the finger.

The middle finger was removed at the joint between the proximal and the middle phalanx in February, 1930, because of an ulcerated lesion involving the medial margin and the base of the nail. This growth began about four months before and the nail was lost about three months before.

There was a rather marked chronic dermatitis of the dorsum of the finger. There was a small ulcer of the skin, 5 mm. across, over the distal joint. There was an ulcerating, warty growth along the medial side and base of the nail. This growth was 1.5 cm. long by 1 cm. wide.

Microscopically there was a proliferation of epithelial cells with the formation of the "epithelial pearls" and invasion of the deeper tissues. There was ulceration and considerable inflammation of the tissues. The diagnosis was squamous cell carcinoma. Microscopic sections of the tumors are shown in the accompanying illustrations.

1. Cole, H. N.: Chronic Roentgen-Ray Dermatoses as Seen in the Professional Man, J. A. M. A. **84**: 865 (March 21) 1925.
2. Rowntree, C. W.: Brit. M. J. **2**: 1111 (Dec. 9) 1922.
3. Ewing: Neoplastic Diseases, ed. 3, p. 143.
4. Alius, H. J.: Beitr. z. klin. Chir. **143**: 567, 1928.

This is the case of a physician in whom a sarcoma developed on the index finger about two years after some rather severe roentgen injuries, and about one year later carcinoma developed on the middle finger. There was no evidence of metastases eight months after the removal of the carcinoma. Mason[5] has reported a case in which metastases were found in the axilla within a year after a small ulcer appeared on the finger. Roentgen injuries are rarely followed by sarcoma in man, yet it appears from the reported cases that it develops in a shorter time and after more severe injuries than is the case with carcinoma.

CONCLUSION

A case is reported in which a sarcoma developed on one finger and one year later carcinoma occurred in another finger of a physician repeatedly exposed to roentgen rays.

528 Higby Building.

SARCOMA OF THE OVARY IN AN INFANT AGED TEN MONTHS *

ALFRED K. BATES, M.D., AND GEORGE SINCERBEAUX, M.D.
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In reporting a case of sarcoma of the ovary in a child aged 8 years, Jaison[1] said: "Sarcoma of the ovary among children under the age of 10 is quite rare. The available bibliography on the subject in the Surgeon General's Library shows only twenty-four cases between 1888 and 1915, including those reported from Austria, Cuba, France, Great Britain, Germany, Russia, Sweden and the United States." This being the case, sarcoma of the ovary occurring at the age of 10 months seems worthy of record.

The patient was born in June, 1928. Both parents were healthy; the father was 24 years of age and the mother 18. Delivery was normal and the infant had no diseases up to the middle of March, 1929, when the symptoms of present illness were first noted.

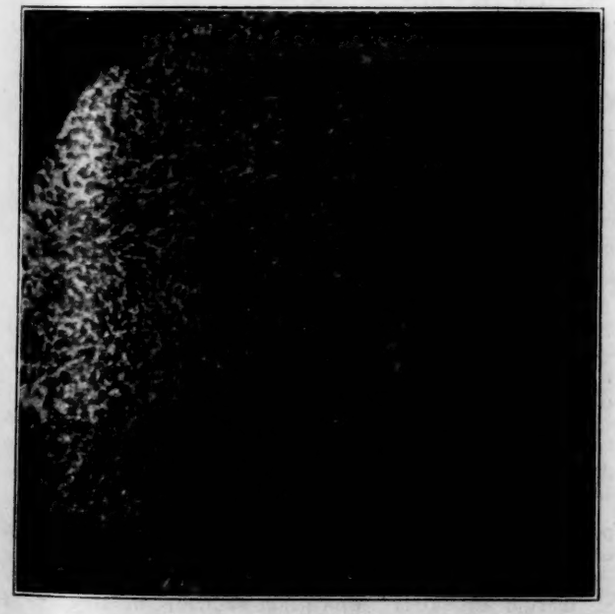

Fig. 1.—Section of spindle cell sarcoma under low power.

A cough with a slight elevation of temperature initiated the illness. The cough persisted, becoming spasmodic in character, but a definite diagnosis of whooping cough was not made. April 9, the infant began vomiting and the abdomen became moderately distended. Symptoms of shock developed. An enema returned with some feces and considerable gas. Improvement in the infant's condition was noted following this. Vomiting recurred the following day and the abdomen became more distended. Enemas returned clear without any gas.

Physical examination at this time showed that the child was rather pale. Her head was large and square, and she had no teeth. The temperature was 102 F. The throat was normal. The heart sounds were good and there were a few bronchial

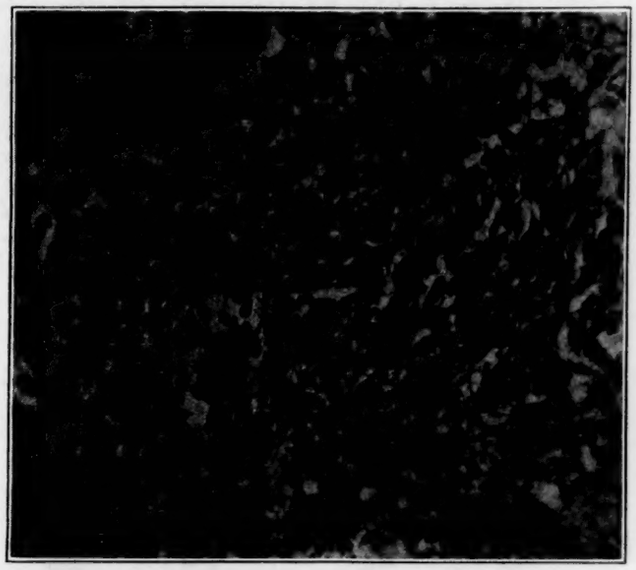

Fig. 2.—Section of spindle cell sarcoma under high power.

râles in both lungs but there was no consolidation. The abdomen was distended, tympanitic, and showed tenderness and muscle spasm in the right lower quadrant. No mass was palpable. Rectal examination was negative. Twelve hours later, during which time saline solution had been given subcutaneously, the general condition was much the same, but an indefinite mass could be felt in the right lower quadrant of the abdomen. With a working diagnosis of intestinal obstruction due to intussusception, operation was advised.

The abdomen was opened through a right rectus incision. About 2 ounces of old, partially clotted blood escaped. This came from a firm smooth tumor 3 inches (7.5 cm.) in diameter arising from the right ovary. It was adherent over an area approximately 1 inch (2.5 cm.) in diameter to the anterior abdominal wall near the site of incision. The tumor was removed, but when being freed from the abdominal wall part of its contents, which were under considerable tension, escaped into the peritoneal cavity. This was homogenous and jelly-like in consistency.

The infant made a fairly satisfactory convalescence for four days after operation. She retained her feedings, and her bowels moved. The cough continued much the same as prior to operation. On the morning of April 15, she had a convulsion lasting several minutes. Following this, vomiting again began, and the temperature, which had ranged between 99 and 100, went to 108. During the next twenty-four hours there were several convulsions, and the vomiting continued. The spinal fluid was under no tension; no pus cells were found, and no growth was obtained on culture. The infant died, April 16.

POSTMORTEM EXAMINATION

Permission was granted for a postmortem examination of the abdomen only. No evidence of peritonitis or intestinal obstruction was found and nothing to account for the infant's death. A tumor similar to that in the right ovary was found in the left ovary. The pathologist reported: "The right ovary shows spindle cell sarcoma with numerous areas of degeneration. The left ovary shows spindle cell sarcoma covered by a less neoplastic cortical portion having a serous covering."

National Bank of Auburn Building—6 Williams Street.

5. Mason, M. L.: Carcinoma of Hand, Arch. Surg. **18**: 2107 (May) 1929.

* From the Auburn City Hospital.

1. Jaisohn, Philip: Sarcoma of Ovary in a Child Eight Years Old, J. A. M. A. **95**: 1097 (Oct. 11) 1930.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS APPROVED THE FOLLOWING ARTICLE.

H. A. CARTER, Secretary.

BODY MECHANICS AND POSTURE

ROBERT BAYLEY OSGOOD, M.D.
BOSTON

Physical therapy is considered by the Council of the American Medical Association to represent the treatment of disease, defect or injury by other than mental, medicinal or surgical measures. It must include preventive as well as remedial measures if it is to fulfil the dominating purpose of modern medicine. To safeguard health and well being is as great a responsibility of physicians and physical therapists as to restore health and well being.

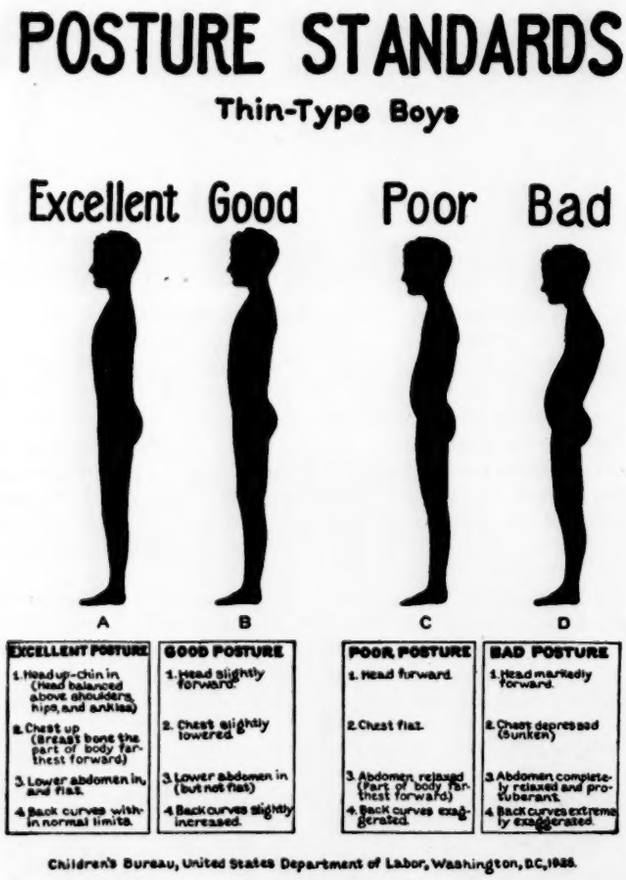

Fig. 1.—Chart published by Children's Bureau to illustrate posture standards of thin-type boys: *A*, excellent; *B*, good; *C*, poor; *D*, bad. In figures 2-6 only the silhouettes will be reproduced, to conserve space.

In this short discussion of the principles of body mechanics and posture an attempt will be made to impress the medical profession with the importance of developing the body to its highest mechanical efficiency, to the end that the various complicated and correlated systems may function with the least amount of wear and the greatest amount of power. Body mechanics may be said to form the basis of all physical therapy, an irreducible minimum which must be satisfied if one is to expect remedial measures to be most fully effective. The subcommittee of the recent White House Conference has defined body mechanics as "the mechanical correlation of the various systems of the body with special references to the skeletal, muscular, neurological and visceral systems." Normal body mechanics obtains when this mechanical correlation is most favorable to the function of these systems.

The first strong voice that challenged attention to this subject was heard in Paris nearly 200 years ago. It was that of Andry, the dean of the Faculty of Medicine. Before the most dignified tribunal of his time this octogenarian defended his thesis, "Orthopaedia," maintaining that most of the ills of childhood and many of the diseases and deformities of later life had their origins in the faulty use and malalinements of the body's marvelous machine. His strong conviction was the legitimate child of his long experience. Andry's disciples have been few until the last twenty-five years, but their number is rapidly increasing, as is evidenced by posture leagues and posture clinics. Orthopedic surgeons and physical therapists have kept the neglected child alive, but pediatrics seems likely to take charge of its development until it reaches the full stature of an important and powerful preventive and remedial agent.

The terms posture and body mechanics have been used more or less synonymously in recent literature and probably will continue to be so employed; but perhaps body mechanics is the more descriptive and inclusive term.

WHAT CONSTITUTES GOOD BODY MECHANICS?

In the recent report of the Subcommittee on Body Mechanics of the White House Conference, it was stated that:

Certain approximate statements may be made as to body mechanics or posture. Unless the requirements which the statements suggest are met, good body mechanics cannot be said to exist in the individual under consideration.

(*a*) The head with the "chin in," i. e., pulled back until its point is nearly over the sternal notch, is balanced above the shoulders, hips and ankles.

(*b*) The thorax with the costal angle wide is poised in such a position that the sternum becomes that part of the body farthest forward.

(*c*) The lower abdomen is held "in" and "flat."

(*d*) The lower extremities are so alined with the trunk and head that the lower ends of the femurs and the upper ends of the tibias oppose each other in such a manner as to support the superincumbent body weight with the minimum amount of muscular exertion or tonus.

(*e*) Good body mechanics does not obtain unless the balance of the muscles of the lower extremities is favorable to weight bearing lines which will protect the joint mechanisms of the feet.

The spinal column is not deviated laterally and its normal lordotic and kyphotic anteroposterior curves are not exaggerated.

If the spinal curves which are associated with the habitual posture of the individual are not so extreme as to threaten or produce joint and muscle strain or disturbance of the visceral relations; if the posture is such that there still remains a "margin of safety" which allows more mobility in all directions, the spinal curves and the weight bearing lines of the lower extremities may be said to fall within normal limits for the individual under consideration.

BODY TYPES

There are two contrasting types of body build, and between them, all grades of variation, approaching from both extremes a theoretical neutral type. There is a "slender," high-strung type as one extreme, and a "stocky," placid type as the other extreme. The more serious and significant faults of body mechanics are

found among individuals exhibiting the "slender" (visceroptotic) type of body build.

The accompanying reproductions of charts published by the Children's Bureau of the Department of Labor will illustrate four grades of body mechanics or posture by which rough classifications of children and adults may be made.

A may represent excellent or almost perfect posture.

B may represent good but not ideal posture.

C may represent poor but not the worst possible posture.

D may represent bad and very possibly symptom-producing posture.

RELATION OF GOOD BODY MECHANICS TO GOOD FUNCTIONAL HEALTH AND OF POOR BODY MECHANICS TO POOR FUNCTIONAL HEALTH [1]

For a fuller discussion of the relation of good body mechanics to good functional health and of poor body mechanics to poor functional health, the reader is referred to the report of the Subcommittee on Orthopaedics and Body Mechanics under the main Committee on Medical Care of the White House Conference (Dr. Philip Van Ingen, chairman). Through the ages, armies have been trained in good body mechanics as an essential to efficiency and endurance; sculptors and painters have expressed alertness and strength by figures that exhibit good body mechanics, and depression and weakness by figures that exhibit poor body mechanics; snapshots of successfully competing athletes at the end of their supreme effort may be used as illustrations of good body mechanics.

Clinical evidence strongly suggests an intimate relation between body mechanics and health because of the following repeated observations of pediatricians and orthopedic surgeons who have studied the results of training in body mechanics.

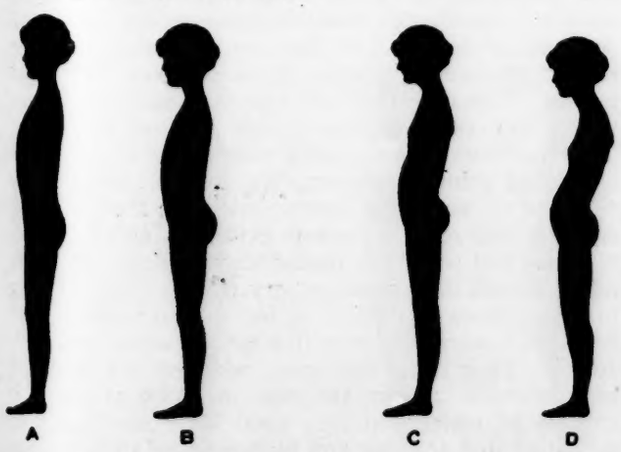

Fig. 2.—Posture standards of thin-type girls: *A*, excellent; *B*, good; *C*, poor; *D*, bad.

1. In the absence of an organic lesion, failure to gain weight and digestive disturbances, although the diet is appropriate and adequate, are frequently associated with poor body mechanics. Weight tends to increase and digestive disturbances to cease when poor body mechanics is changed to good body mechanics.

2. Bowels that are sluggish and irregular tend to become more active and regular with improvement in body mechanics.

3. Cyclic vomiting and certain presumably toxic crises occurring in individuals exhibiting poor mechanics have ceased concomitantly with the correction of the poor body mechanics.

4. Increase in alertness, vigor and endurance is usually noticed with improvement in body mechanics, posture and muscle tone.

Goldthwait,[2] in 1908, called attention to "the relation of posture to human efficiency and the influence of poise on the support and function of the viscera." Sir

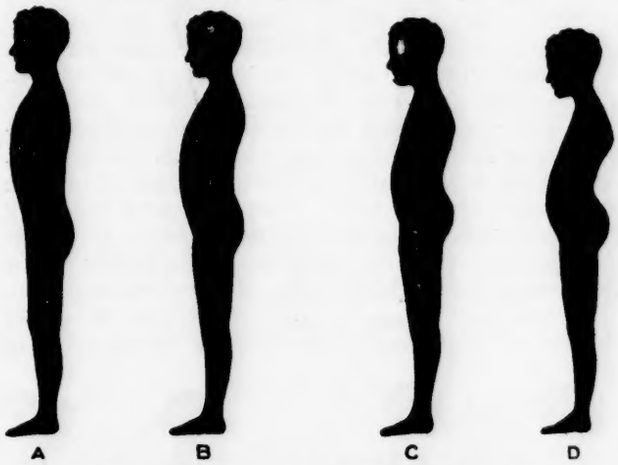

Fig. 3.—Posture standards of intermediate-type boys: *A*, excellent; *B*, good; *C*, poor; *D*, bad.

Arthur Keith [3] has found in his anthropologic studies that the acquirement of good posture tends to correct enteroptosis, and the experimental studies of Mankell and Koenig [4] amply confirm Sir Arthur's observations. The anatomist MacKenzie [5] has said that, if generalizations were to be made concerning the causes of human diseases, they would be along the line of failure of accommodation to the erect posture. Carnett,[6] in his studies of patients complaining of abdominal pain and tenderness, has found that these symptoms are located in the abdominal wall more commonly than in the abdominal viscera. He is convinced that failure to recognize this fact subjects many patients to needless and futile intra-abdominal gynecologic and urologic operations. He believes that the most common cause of parietal pain and tenderness, especially in individuals under 30 years of age, is excessive lumbar lordosis, one of the commonest manifestations of faulty body mechanics. The pain and tenderness which he describes arise, in his opinion, from irritation of the spinal nerves as they pass through the intervertebral foramina. He has found that these symptoms disappear with the correction of the excessive lordosis and the faulty body mechanics.

1. Much of this material concerning the relation of body mechanics and functional health has been taken from the Reports of the Committees of the White House Conference.

2. Goldthwait, J. E.: The Relation of Posture to Human Efficiency and the Influence of Poise upon the Support and Function of the Viscera, read at a meeting of the Boston Medical Library held in conjunction with the Suffolk District Medical Society, Dec. 2, 1908, and also at a meeting of the American Orthopaedic Association at Hartford, Conn., in June, 1909.

3. Keith, Arthur: The Nature and Anatomy of Enteroptosis, Lancet **1**: 361 (March 7) 1903.

4. Mankell, N. K., and Koenig, E. C.: Postures and Types of Breathing Exercises, New York M. J. **104**: 935 (Nov. 11) 1916.

5. MacKenzie, C. W.: Intellectual Development and the Erect Posture, Melbourne, A. Grant, 1924.

6. Carnett, J. B.: Intercostal Neuralgia as a Cause of Abdominal Pain and Tenderness, Surg. Gynec. Obst. **42**: 625 (May) 1926; Chronic Pseudo-Appendicitis Due to Intercostal Neuralgia, Am. J. M. Sc. **174**: 579 (Nov.) 1927; Acute and Recurrent Pseudoappendicitis Due to Intercostal Neuralgia, ibid. **174**: 833 (Dec.) 1927; The Simulation of Gallbladder Disease by Intercostal Neuralgia of the Abdominal Wall, Ann. Surg. **86**: 747 (Nov.) 1927; The Simulation of Various Intra-Abdominal Lesions by Intercostal Neuralgia of the Abdominal Wall, M. J. & Rec. **129**: 64 (Jan. 16) 1929.

The surveys that have been made suggest the same intimate association between poor body mechanics and poor functional health and between good body mechanics and good functional health.

Brown,[7] in a postural survey of the entering classes of Harvard College, after reviewing the past history and present condition of these men, came to the conclusion that there was a definite correlation between good functional health and good body mechanics.

In the Chelsea survey,[8] sponsored by the Children's Bureau of the Department of Labor, statistics were gathered concerning pupils trained for a year in body mechanics and carefully checked by the same statistics or an approximately equal control group of children of the same grades in the same school at the same time who received only the regularly prescribed calisthenics but no training in body mechanics. In the first, or autumn, quarter of the school, the rate of absence on account of illness of the group who were beginning their body mechanics training happened to be higher than the rate of the control group. The studies of the absences of school children due to illness made in both Maryland and Missouri[9] have shown that in school children a higher rate of absences for illness exists in

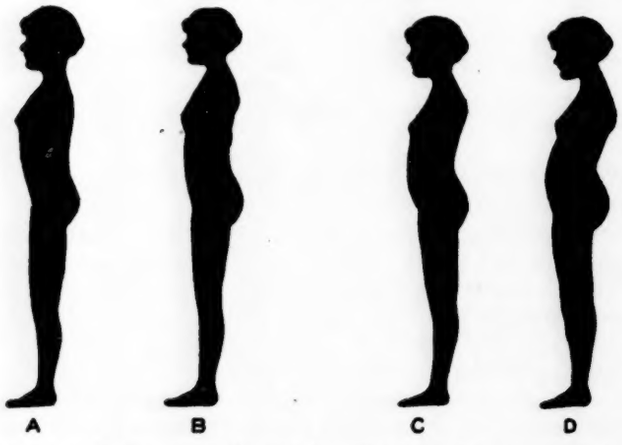

Fig. 4.—Posture standards of intermediate-type girls: *A*, excellent; *B*, good; *C*, poor. *D*, bad.

the spring than in the autumn quarter. In the Chelsea survey, this held true of the control group, but among the group trained in body mechanics, the spring rate of absence for illness was considerably lower, not only than that of the control group, but still lower than their own rate during the autumn quarter. The conclusions of the impartial reporters of the survey were as follows: "Analysis of the records shows that favorable results may be attributed to posture training. Posture training and the maintenance of correct posture contributed to the health and efficiency of normal grade school children."

One who seeks sound anatomic and physiologic bases for these clinical observations will find them in Goldthwait's[10] Shattuck Lecture on the "Anatomic and Mechanistic Conception of Disease" and in Sherrington's[11] theory of postural tonus. In considering the body mechanics of an individual it is fair to assume that, the greater the departure of his body from the line of the center of gravity, from balance and counterbalance, from effortless equilibrium, the greater will be the amount of reflex muscular action or tonus required to maintain the body in the upright position. A constant ratio exists between the degree of muscular contraction required and the degree of fatigue induced, and it will be generally granted that fatigue exerts an unfavorable effect on functional health.

PREVALANCE OF POOR BODY MECHANICS IN THE UNITED STATES

In a study of the posture of students in the entering classes of Harvard College made in 1916 by Brown,[7] over 80 per cent were found to fall in the C and D grades illustrated in the charts. Similar surveys conducted by Cook[12] at Yale and by Thomas[13] of the women entering Smith College yielded similar percentages. Rough statistics collected during the universal draft of the World War suggest that less than 50 per cent of the young men of the country exhibit good body mechanics. An alarmingly large number of men were rejected not because of any organic defect but because of poor physique, concomitant with poor body mechanics. In the survey of more than 2,000 children between the ages of 5 and 18 attending a public grade school in the city of Chelsea, Mass., conducted by the Children's Bureau of the Department of Labor,[8] over 80 per cent were found to exhibit C and D grades of body mechanics.

Poor body mechanics is not "outgrown" to any considerable extent without training, as the adult figures demonstrate.

CAUSES OF POOR BODY MECHANICS, RATIONALE OF ATTACK, EXPECTATION OF RESULTS

Causes.—Much investigation of the basic causes of this surprising prevalence of poor body mechanics is needed. Seemingly three fourths of the youth of America exhibit it. This does not mean that in 75 per cent it produces symptoms or causes poor functional health. Human bodies are equipped with many protective devices and possess wide margins of safety. They continue to run fairly well under abuse. The effects of minor malalinements are not immediately felt, and the causes of chronic disorders are often not easy to analyze. If there is evidence (and I believe there is) that poor body mechanics may slowly and over a long period induce unnecessary fatigue, then not only must its causes be sought out but also an attempt must be made to correct it even if a specific cause cannot be found. Poor body mechanics, whatever its cause, is not inevitable and in the vast majority of cases is capable of conversion into good body mechanics by education and training and by providing an activating incentive.

Rationale of Attack.—The Chelsea survey demonstrated that such education and training may be provided without any important disturbance of the regular school curriculum. The physical education and health department of the Los Angeles public schools is enthusiastic over the results of such a system, which has been developed over a period of twelve years and is most stressed in the kindergarten and primary grades.[14] The

7. Brown, L. T.: A Combined Medical and Postural Examination of Seven Hundred and Forty-Six Young Adults, Am. J. Orthop. Surg. **15**: 774-787 (Nov.) 1917.
8. Klein, A., and Thomas, L. C.: Chelsea Survey: Posture and Physical Fitness, Children's Bureau Publication, Dept. of Labor, Washington, D. C., to be published.
9. Collins, S. D.: Morbidity Among School Children in Hagerstown, Md., Pub. Health Rep. **39**: 2391-2423 (Sept. 19) 1924; Sickness Among School Children, ibid. **36**: 1549-1559 (July 8) 1921.
10. Goldthwait, J. E.: Anatomic and Mechanistic Conception of Disease (Shattuck Lecture), Boston M. & S. J. **172**: 881-898 (June 17) 1915.
11. Sherrington, C. S.: The Integrative Action of the Central Nervous System, 1908.
12. Cook, R. J.: Report of the Orthopedic Examination of 1,393 Freshmen at Yale University, J. Bone & Joint Surg. **4**: 247 (April) 1922.
13. Thomas, Leah C., and Lindner, Amy: A Few Observations in Body Mechanics, Research Quarterly American Physical Ed. Ass'n. **1**, October, 1930.
14. Annual Reports of the Department of Health and Corrective Physical Education, Los Angeles, July, 1926-July, 1929.

Boston public schools have placed a manual of body mechanics in all their junior grades, and the instruction and training in this subject is a required part of the physical education of all public school children.[15]

Expectation of Results.—The question may very reasonably be asked, "Is good body mechanics, once acquired, retained by any large number of individuals without effort?" Cook[12] at Yale found that the improved grades of body mechanics attained by the students as a result of training carried on during the college year till the end of the spring term were in the majority of instances retained when they returned in the autumn after a summer of no special training. Thomas and Lindner[13] at Smith have watched a considerable group of girls who came to college from a preparatory school in which excellent and continuous training in body mechanics is given. The photographic or silhouettograph records of these girls on entrance to the preparatory school showed C and D grades of posture. At graduation from the preparatory school their grades had improved to A and B grades. At Smith College, those women exhibiting A and B grades of posture are excused from special training in body mechanics as long as in the "check ups" on their posture they retain these grades. During their four year college course, this group of students from this preparatory school almost without exception retained their A and B grades without training, and by actual count more students changed from B to A grades than from A to B grades during these years in which special work in body mechanics was omitted. Other less extensive studies suggest the same expectation of results.

METHODS OF TRAINING IN DIFFERENT AGE GROUPS

1. Infancy: The skeletal bone, if subjected to abnormal stresses, will develop abnormalities of growth. Parents should be instructed by their medical advisers as to the proper positions of holding infants and as to the importance of symmetrical and nondeforming positions in recumbency.

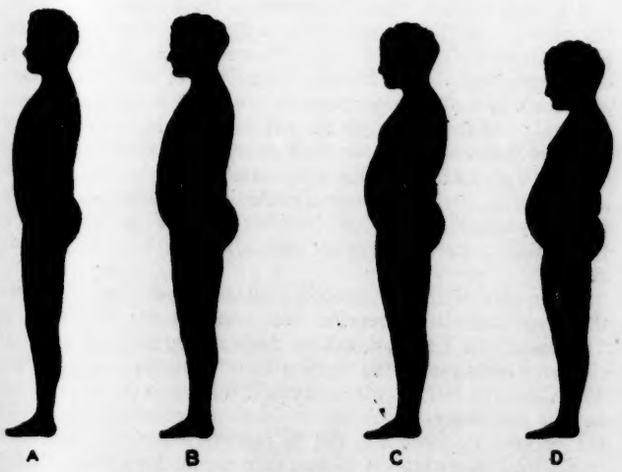

Fig. 5.—Posture standards of stocky-type boys: *A*, excellent; *B*, good; *C*, poor; *D*, bad.

2. From 2 to 6 Years: In the period from 2 to 6 years, faulty body mechanics begins to manifest itself. In this age period the training in body mechanics must make use of the strong imitative instincts of the child, by employing plays and games which necessitate the exhibition of good body mechanics.

3. From 6 to 12 Years: During this period, purposeful exercises and corrective positions in recumbency during rest periods comprise the methods of preventing and correcting the tendency to poor body mechanics, occasionally in children exhibiting low grades of posture being supplemented by light corrective apparatus but only under the advice and supervision of a physician.

4. Adolescence and Early Adult Life: The exercises and the corrective positions, as under 3, are continued, but strong incentives can now be utilized as activating motives for the attainment and retention of good body mechanics. These incentives include personal attractiveness, athletic prowess and exemption from special body mechanics training hours as long as the A or B grades are maintained.[16]

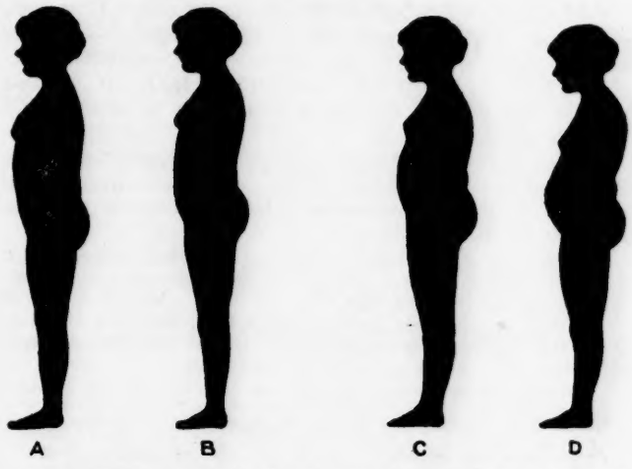

Fig. 6.—Posture standards of stocky-type girls: *A*, excellent; *B*, good; *C*, poor; *D*, bad.

COMMENT

It would appear from this brief discussion of body mechanics and posture that the subject is worthy of close attention and study by all those interested in physical therapy. Of the surprising prevalence of faulty body mechanics and poor posture there can be no doubt. Of the close association of good body mechanics and good functional health and of poor body mechanics and poor functional health, the physiologic basis is sound and the clinical evidence is strong. The underlying causes of poor body mechanics need investigation; but, whatever these causes may be, the conversion of poor body mechanics into good body mechanics seems to be possible in the vast majority of cases and the retention of good body mechanics after adequate training in its principles seems to be a reasonable expectation.

If these ideals are realized, one may expect a future race more healthy and better balanced than the present humiliating physical race revealed by the universal draft of the World War and by every informed survey of the youth of the nation.

372 Marlborough Street.

15. Boston Public School Document Number 6, 1930.

16. The reader is referred to a small but very useful book entitled "Body Mechanics and Health," by Miss Leah C. Thomas, assistant professor of hygiene at Smith College, published by Houghton and Mifflin, Boston.

The History of Medicine.—May I, for a moment, ask you to visualize the progress of medicine as the course of a river having an uncertain source in Egypt and Babylon, augmented by rivulets of Hebrew and Asiatic origin, to grow into a noble stream of speculative and natural sciences through the glorious epochs of Greece and Rome? After the crash of these great Mediterranean civilizations the stream was for many centuries lost in the slough and quagmire of the dark ages of European history. So gross was the darkness of these times that it seemed uncertain that anything from the golden age of Greece could survive, but fortunately among the stagnant, malodorous pools of this morass three currents percolated to convey something of the erudition of Greece and the glory that was Rome. —Dawson, Bernard: The History of Medicine, London, H. K. Lewis & Co., Ltd., 1931.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

CALCIUM GLUCONATE.—Normal Calcium Gluconate. —Calcium Salt of hexapentol-(2,3,4,5,6)-Acid-(1). — Calcium salt of $\alpha\beta\gamma\delta\epsilon$ pentoxy-pentane-carbonic acid. — $[HOCH_2CH(OH)CH(OH)CH(OH)CH(OH)COO]_2Ca.H_2O$. It contains calcium equivalent to not less than 12.4 nor more than 12.8 per cent of calcium oxide.

Actions and Uses.—Calcium gluconate is used to obtain the therapeutic effects of calcium. It is more palatable than calcium chloride for oral administration and for hypodermic or intramuscular use is nonirritant.

Dosage.—Orally, for adults, 5 Gm. (75 grains) three times a day; for children, 2 Gm. (30 grains) three times a day. Intramuscularly or intravenously, for adults, 1 Gm. administered every day, on alternate days or every third day; for children, 0.2 to 0.5 Gm. administered every day, on alternate days or every third day.

Calcium gluconate occurs as white, odorless and tasteless granules, consisting of fine needle crystals. It crystallizes from an aqueous solution with one molecule of water and has the formula $(C_6H_{11}O_7)_2Ca.H_2O$. It loses completely its water of crystallization only after prolonged drying in a high vacuum at 105 C. A 3 per cent aqueous solution is slightly dextrorotatory. When heated it swells up, and during carbonization emits an odor of burning filter paper. It is soluble in cold water (1 in 30); soluble in boiling water (1 in 4 to 5), crystallizing on cooling. It possesses distinct tendencies to form supersaturated solutions. It is insoluble in alcohol and fat solvents. Cold, saturated aqueous solutions are neutral to litmus paper. Addition of diluted sulphuric acid to a 3 per cent aqueous solution causes only incomplete precipitation of the calcium as calcium sulphate, even on heating.

Dissolve 1 Gm. of calcium gluconate in 10 cc. of water; add 2 cc. of ammonia water and 5 cc. of ammonium oxalate: an immediate precipitation, which readily deposits on heating, results (*calcium*). To 1 cc. of a 10 per cent aqueous solution add 1 drop of ferric chloride: a canary yellow color is obtained (*a-oxyacid*). To 5 cc. of a 10 per cent aqueous solution add 0.65 cc. of glacial acetic acid and 1 cc. of phenylhydrazine (fresh) and heat the mixture on a steam bath for thirty minutes; allow to cool, and scratch the sides of the tube for a few seconds with a glass rod: a crystalline deposit of gluconic-acid-phenylhydrazide is formed. Filter the crystalline mass, and purify by dissolving in 10 to 15 cc. of hot water; add a small amount of charcoal and filter; allow the filtrate to cool: pure white crystals melting with decomposition at 200 to 202 C. are obtained.

To 5 cc. of a 3 per cent aqueous solution of calcium gluconate add 5 drops of nitric acid and 1 cc. of silver nitrate: not more than a slight opalescence appears (*chloride*). To 5 cc. of a 3 per cent aqueous solution add 2 cc. of alkaline cupric tartrate solution and boil: no reduction takes place (*glucose*). To 5 cc. of a 3 per cent aqueous solution add 5 drops of diluted hydrochloric acid and 1 cc. of barium chloride solution: no turbidity appears (*sulphate*). An aqueous solution meets the requirements of the U. S. P. tests for the absence of heavy metals (see U. S. P. X, p. 439).

Transfer about 0.2 Gm. of calcium gluconate, accurately weighed, to a large platinum crucible and moisten with 3 drops of olive oil; heat slowly and after carbonization heat the residue at red heat in an electric muffle furnace until it is completely white; bring the residue to constant weight: the residue represents not less than 12.4 nor more than 12.8 per cent of calcium oxide.

Calcium Gluconate-Pfizer.—A brand of calcium gluconate-N. N. R.

Manufactured by Chas. Pfizer & Co., Inc., Brooklyn, N. Y. U. S. patent applied for.

CONCENTRATED POLLEN ANTIGENS-LEDERLE.—Liquids obtained by extracting the protein from the pollen of plants with a liquid consisting of 67 per cent of glycerin and 33 per cent of a buffered saline solution.

Actions and Uses.—See Allergic Protein Preparations, New and Nonofficial Remedies, 1930, p. 23.

Dosage.—See Allergic Protein Preparations, New and Nonofficial Remedies, 1930, p. 23.

Concentrated pollen antigens-Lederle are marketed in packages of fifteen syringes containing, respectively, 2.5, 5, 10, 20, 35, 60, 100, 165, 275, 450, 750, 1,200, 1,800, 2,400 and 3,000 pollen units; also in supplementary treatment packages of five syringes containing, respectively, 3,600, 4,200, 4,800, 5,400 and 6,000 pollen units.

Manufactured by the Lederle Laboratories, Inc., Pearl River, New York. No U. S. patent or trademark.

Concentrated Pollen Antigen (Lederle) Ragweed Combined.

Concentrated pollen antigens-Lederle are prepared by grinding the dried pollen with glass dust for six hours, using a diluent composed of 67 per cent glycerin and 33 per cent of a solution containing 0.5 per cent sodium chloride, 0.27 per cent sodium carbonate and 0.4 per cent phenol, to moisten the pollen. The material is shaken in a mechanical shaker, incubated for eighteen hours, shaken again, paper-pulped, and Berkefeld filtered. The finished stock extract contains 30,000 pollen units per cubic centimeter, the pollen unit having been arbitrarily chosen as the equivalent of 0.001 mg. of pollen.

Concentrated pollen antigens-Lederle are standardized by the complement fixation method to determine the active antigenic power of their protein content. Immune serum is obtained from rabbits which have been immunized with a gradually increasing number of units of pollen. Using the same technic for complement fixation as that adopted by the Research Laboratories for the Department of Health, New York, one pollen unit is found to be equivalent approximately to one-twentieth unit of antigen, a unit of antigen being taken as the smallest amount that gives complete fixation in the hemolytic series.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED THE PUBLICATION OF THE FOLLOWING REPORT.

W. A. PUCKNER, Secretary.

SULFOBETIN NOT ACCEPTABLE FOR N. N. R.

Sulfobetin is a product of Sulfobetin-Vertrieb, Bratislava, Czechoslovakia: its consideration was requested by the American representative, Alex Friedmann and Co., Chicago. Sulfobetin is marketed in the form of tablets: Sulfobetin Antidiabeticum; Sulfobetin Bio, and Sulfobetin Cutis.

The substance designated as "Sulfobetin" is stated to consist of organic, nitrogen containing, sulphur iodide compound, which is prepared in such a manner that sulphur with the aid of an iodine containing catalyzer or sulphur iodide with the help of a suitable catalyzer, is made to act on a nitrogen containing organic substance. The Council was informed that so far no chemical formula has been determined for the "concentrated" Sulfobetin which is contained in the marketed preparations for the reason that the potent agent could not be isolated, it being suggested that we are no doubt concerned with albumin in which one or more H groups have been replaced with S and that the product is contaminated with admixed albumin groups and a small amount of iodine which was used as a catalyzator. From the "formulae" which were furnished the Council it appears that Sulfobetin Antidiabeticum contains as its medicinal ingredients "Sulfobetin" and yeast; that Sulfobetin Bio contains "Sulfobetin" and powdered iron; and that Sulfobetin Cutis contains "Sulfobetin," yeast and animal charcoal. While the amounts of the ingredients in a tablet were declared, no information was furnished to show that the composition and uniformity of "Sulfobetin" are controlled or that the composition of the other components of the marketed preparation is controlled.

It is claimed that when Sulfobetin is administered "the quantity of sugar in the urine as well as the amount of sugar in the blood gradually decrease"; that "According to the seriousness of the case and the duration and quantity of the remedy used, glycosuria as well as hyperglycemia are cured in different periods of time"; and that "The patient will find that he can soon digest the carbohydrates after a short course of Sulfobetin." It is claimed that Sulfobetin Bio is indicated in forced diets "(Mastkuren, resp. bei verminderter Assimilationsbereitschaft für Kohlenhydrate)" and that Sulfobetin Cutis is indicated in furunculosis, eczema, pruritus and all staphylomycoses of the skin.

In support of the therapeutic claims advanced for Sulfobetin the firm submitted reprints of two articles published in "Therapio" (a Czechoslovakian medical journal) in 1928 and circulars containing brief reports from a number of physicians. The Council's referee who examined this material reported that he was not impressed by the evidence presented and that it did not present evidence for the therapeutic value of Sulfobetin; that a real investigation of one case would have been of more value than all of the collected statements which were presented.

Sulfobetin, Sulfobetin Antidiabeticum, Sulfobetin Bio and Sulfobetin Cutis are unacceptable: (*a*) because the identity and chemical composition of "Sulfobetin" is indefinite and because no evidence is supplied to show that the composition and uniformity of the preparations stated to contain it are controlled; (*b*) because no evidence for the therapeutic value of Sulfobetin or of the preparations containing it has been supplied; (*c*) because the names Sulfobetin Antidiabeticum and Sulfobetin Cutis are therapeutically suggestive, and (*d*) because no evidence for the rationality of a mixture of Sulfobetin with yeast, of Sulfobetin with powdered iron, or of Sulfobetin with yeast and animal charcoal has been furnished.

COMMITTEE ON FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COMMITTEE ON FOODS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

TOREX (Concentrated Beef Bouillon)

Manufacturer.—International Products Corporation, New York City.

Description.—A semifluid mixture of beef extract, salt, vegetable extract, starch, and powdered white pepper and onion; packed in block-tin tubes.

Manufacture.—The two types of beef extract used are by-products of beef canning at the company's plant in Paraguay. Only examined healthy cattle passed by government inspectors are used. The first type of extract is prepared by parboiling boned beef meat in water. The water extract is concentrated in tin lined pans to a moisture content of approximately 16 per cent and then packed in large tin cans. The second type of beef extract is prepared from meat adhering to the bones. The bones and adhering meat are boiled in water. Meat extract and some gelatin are extracted. The extract is concentrated to approximately 25 per cent moisture content and canned by the procedure and equipment outlined for the first extract. The canned beef extracts are exported to the United States, where they are examined at the port of entry by the Bureau of Animal Industry before release for entrance. The Paraguay plant is maintained in strictly sanitary condition.

The Torex Concentrated Beef Bouillon is manufactured in New York State from the following ingredients: the two types of beef extract, vegetable extract, salt, a small amount of starch, powdered white pepper and onion for flavor, and water. The vegetable extract is prepared in a plant under federal supervision. Wheat and fresh vegetables are extracted with a dilute solution of chemically pure hydrochloric acid. The acid of the extract is neutralized with sodium bicarbonate and the practically neutral solution evaporated to a viscous mass. The vegetable extract has the following proximate analysis:

	per cent
Moisture	9.0
Ash	51.3
Sodium chloride (salt)	51.0
NaCl free ash	0.3
Fat (ether extract)	0.3
Protein (N × 6.25)	33.0
Reducing sugars, before and after inversion	0.0
Crude fiber	0.0
Carbohydrates (by difference) other than crude fiber	6.4

The total ingredients are warmed and thoroughly mixed until the mixture is smooth and has the desired viscosity. The mixture is filtered through monel-metal filters to remove undissolved material. The filtrate is filled into block-tin tubes from automatic monel-metal tube filling machines.

Chemical Composition.—

(proximate analysis)	per cent
Moisture	45.9
Total ash	28.8
Sodium chloride	23.6
Salt free ash	5.2
Total nitrogen	3.2
Fat (ether extract)	0.4
Reducing sugars before inversion as dextrose	None
Starch	2.1
Creatine	2.70
Creatinine	1.35
Acidity (cc. N/10 alkali per gram) 3.54 cc.	
Phosphorus as P_2O_5	1.98
Potassium (K)	2.17

Calories.— 0.12 per gram
3.4 per ounce

Claims of Manufacturer.—Torex Concentrated Beef Bouillon dissolves instantly in hot water. Bouillon prepared according to directions is a quickly prepared warm drink for the home and camp table. The relatively low salt content for this type of product adapts it for seasoning gravies, soups, stews, etc. One teaspoonful is just sufficient to season and flavor properly one cup of hot water. It is recommended for invalids and convalescents and is useful in reduction diets. Packed in the tin tube, it keeps indefinitely. The prepared hot bouillon as a warm drink is helpful for inducing sleep.

BOWEY'S HOT CHOCOLATE POWDER
(Made from Liquor Chocolate, Cane Sugar and Skim Milk)

Manufacturer.—Bowey's Incorporated, Chicago.

Description.—A mixture in powder form of chocolate liquor, cane sugar and skim milk flavored with vanilla extract.

Manufacture.—Chocolate liquor containing at least 55 per cent cacao butter, sucrose and skim milk are heated and thoroughly mixed to assure emulsification. The mixture is dried in "vacuum pans" and the dried mass ground to a powder and packed in tins.

Chemical Composition.—

(proximate analysis)	per cent
Moisture	1.0
Ash	2.4
Fat (ether extract)	18.5
Protein (N × 6.25)	11.2
Sucrose	48.0
Crude fiber	1.1
Carbohydrates (by difference) other than crude fiber	65.8

Calories.— 4.75 per gram
134.9 per ounce

Claims of Manufacturer.—The product makes a wholesome and delicious beverage of high caloric value. It can be used in the preparation of delicious desserts.

LIBBY'S STERILIZED UNSWEETENED EVAPORATED MILK

Manufacturer.—Libby, McNeil and Libby, Chicago.

Description.—An unsweetened evaporated milk.

Manufacture.—The milk is collected under prescribed conditions of sanitation, strained, cooled to 60 F. or under and delivered to the condensary each day. The delivered milk is tested for odor and acidity; a "reductase test" with methylene blue (methylthionine chloride U. S. P.) is applied. Speed of destruction of the color is indicative of cleanliness and the previous treatment. Unsatisfactory milk is rejected. A bacterial count is made each week of a composite of samples of all deliveries.

The accepted milk is passed through steam heated coils into stainless steel or glass lined tanks. The heated milk is concentrated in "vacuum pans" at a temperature of from 130 to 135 F. The low temperature and absence of air has little destructive action on vitamins A and B (complex). The concentrated milk is homogenized by forcing under high pressure through small apertures, which disperses the fat in fine globules and prevents separation during storage.

The homogenized milk is cooled to 40-45 F. and standardized to comply with U. S. Department of Agriculture standard for evaporated milk. The standardized milk is fed through pinhole openings into the cans, which are automatically soldered.

The sealed cans are processed under steam pressure at 240-242 F. for not less than fifteen minutes with a twenty minutes "bringing up time," immediately after which they are cooled to room temperature. After a short storage time the cans are inspected and labeled.

All the equipment and the entire plant are kept under strict sanitary conditions.

Chemical Composition.—

(proximate analysis)	per cent
Total solids	26.1
Ash	1.54
Protein (N × 6.38)	7.2
Fat (ether extract)	7.9
Lactose	9.5

Calories.— 1.38 per gram
39.2 per ounce

Vitamins.—Diluted with an equal volume of water the vitamin A and B (complex) potency approximates that of usual milk.

Micro-Organisms.—The product is sterile.

Claims of Manufacturer.—Libby's Evaporated Milk is clean, easily digestible and contains practically all the nutritive values of ordinary milk, which it approximates when diluted with an equal volume of water. It is recommended in infant feeding. The curds formed in the stomach are smaller, softer and more easily digestible than those from raw or pasteurized milk. It may be used in cooking and baking as is ordinary milk.

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SATURDAY, JUNE 13, 1931

LOSS OF BONE SALTS DURING SCURVY

The probability that inorganic salts are of considerable importance in the diet was early suggested by Liebig. The classic studies of Forster, a pupil of Voit, placed this group of dietary components in the indispensable category, along with proteins and the vitamins, which were to be discovered much later. Today there is no question of the necessity of the mineral salts in the diet; indeed, modern nutrition is characterized in part by the discovery of the physiologic rôle of unusual inorganic elements, often effective in exceedingly small amounts. Approximately 5 per cent of the body consists of mineral salts, a large part being calcium and phosphorus salts located in the bony structures. A study of the physiology of these salts is perforce associated with the growth and changes in osseous tissue. With the development of the conceptions of deficiency diseases and hormone stimulation there gradually evolved more definite ideas of the etiology of certain abnormalities of the skeletal system. The relation of the pituitary to growth of bone, the shift of calcium and phosphorus under the influence of thyroid and parathyroid hormones, and the failure of normal calcification in the absence of vitamin D illustrate some of the relationships that have served to focus attention in recent years on the biochemistry of the inorganic salts.

In the class of deficiency diseases involving the integrity of the bones is scurvy, one of the oldest known maladies. In addition to the more or less obvious hemorrhages that occur as the disease progresses is a failure of the normal deposition of calcium and phosphorus in the bones in spite of the fact that the diet may contain both these elements. A recent study of the replacement of the bone salts in healing scurvy has been made by Salter and Aub.[1] An effort was made to determine whether or not the stores of lime salts in the bone were depleted at the same time that calcification of the growing portion was inhibited by lack of the antiscorbutic vitamin. At various stages of the disease in experimental animals the missing vitamin C was supplied as orange juice and, at the same time, alizarin was injected so that newly deposited bone salts would be stained red and thus be easily detected. The Boston investigators found that in healing scurvy the epiphyseal line was especially well marked, indicating a deposition of salts in the zone of rapid calcification. Furthermore, the cancellous tissue of the epiphysis and diaphysis was stained, the pink trabeculae extending a short way into the medullary cavity. In addition, the shaft was colored by the dye distal to the epiphysis, though not as deeply as were the trabeculae. On the other hand, the bones of the animals receiving no source of vitamin C whatever remained unstained by the dye in spite of the fact that the experimental ration contained calcium and phosphorus.

The fact that one of the signs of scurvy is a defective calcification of the bones has been well recognized. The demonstration that this derangement affects the storage of bone salts in the trabecular tissue as well as the deposition in the epiphysial region is a contribution of considerable importance. Normally, under certain circumstances, notably during lactation, there is a heavy drain on the maternal organism for calcium and phosphorus. Efforts to minimize this drain have thus far met with little success. The studies here discussed point to the fact that the utilization of the bone salts in times of stress may be favored by an abundance of the antiscorbutic vitamin.

1. Salter, W. T., and Aub, J. C.: Studies of Calcium and Phosphorus Metabolism, Arch. Path. **11**: 380 (March) 1931.

COOKERY AND DIGESTIBILITY

Cookery has become an important feature of the modern dietary regimen. As the application of heat to foods represents an important distinction between the feeding habits of man and those of animals, one may properly ask for an explanation of the human peculiarity. Indeed, the "back to nature" cults in many instances insist on the preference for raw foods. There is the widest divergence among races with regard to the use of heat in the preparation of the daily diet. Writers on dietetics avoid the fundamental aspects of the cookery problems. Bronson [1] asserts that civilized peoples ordinarily have a decided antipathy to the use of raw flesh as food. He believes that in part this may have had its origin in the recognition of the necessity of cooking as a health measure. The cooking of meat and some other foods has also been regarded as esthetic in purpose.

Modern bacteriology, with its concern for ubiquitous baneful microbes, has doubtless promoted the cause of cookery to some extent. However, there are many signs of incipient revolt against the widespread prevalence of the use of high temperatures in the processing of foods. This reaction is based in part on the newer knowledge of valuable properties or constituents of foods, notably the vitamins, which are in some instances

1. Bronson, B. S.: Nutrition and Food Chemistry, New York, John Wiley & Sons, 1930.

subject to deterioration when they are exposed to heat and other destructive environmental conditions. The fear of loss of undescribed essential properties of foods has produced some enthusiasm for raw foods. Probably there is much physiologic wisdom in such an attitude. However, justice demands a balancing of all the reputed advantages and disadvantages of heat cookery in the formulation of final judgments. It is desirable to establish all the important facts.

Some of the debated questions involve the comparative digestibility of raw and of cooked foods. The advantage of cooked starches and starchy foods is generally conceded. In the case of protein foods, such as meats and eggs, one often hears it asserted that cookery decreases their digestibility. Raw eggs are lauded by many persons, including physicians, as presenting the acme of digestibility. Yet there are convincing researches indicating that raw egg white, at least, like blood serum, is quite resistant to the proteolytic enzymes. When the protein is heated to the stage of incipient coagulation, digestibility is greatly enhanced. The belief that hard boiled eggs are indigestible is largely a myth. Certainly it is not substantiated by experiment. It is true that raw egg white leaves the stomach with unusual rapidity. The emptying of the stomach is not, however, an indication of digestion.

And now the raw meat propaganda is meeting with experimental rebuff. Against the bold generalization, like that of Hutchison,[2] that the digestibility of animal foods is diminished rather than increased by cooking, may be pitted the tests of Clifford[3] at King's College of Household Science in London. These show that, taking rapidity of hydrolysis as a criterion, meat when raw is in the least digestible condition. The most rapidly digested meat is that which is roasted or grilled until it is just red inside with a moist surface when cut. This point probably coincides with that at which the antienzymic properties of animal tissues are destroyed, while the hardening effect of heat on proteins has hardly come into play. Clifford adds that, if the heating is carried beyond this point and the meat is definitely overcooked, the rate of digestion is slowed but, unless the meat is actually carbonized, it even then appears to be more rapidly digested than raw meat. The least rapidly digested form of cooked meat found in these experiments is an overboiled mince; the most rapidly, an underdone roast. It would therefore seem that, for people with weak digestive powers or for young children, the ideal form in which to administer animal protein is as underdone roast beef minced after cooking. The mince that comes from an ordinary household machine as a moist paste is palatable. Clifford also found that the decrease of digestibility in overcooked meat appears to be due to hardening and drying of the protein since, if underdone roast or grilled meat is rewarmed but not overcooked, its digestion rate is unaltered; but if it is reheated until it is quite overcooked, the rate is slowed. This is in accordance with general opinion among cookery teachers who recommend the rewarming of meat but condemn recooking. Incidentally, it may be remarked that there is no objection to heated milk on the score of digestibility; and several investigators have emphasized the importance of cookery for the most effective utilization of the proteins of the commonly eaten legumes. Apparently, many raw tissues exert some sort of antienzymic action. At any rate, whatever their inherent virtues such as richness in sensitive vitamins, digestion of their proteins is not universally enhanced when they happen to be consumed in nature's state.

2. Hutchison, Robert: Food and Principles of Dietetics, New York, William Wood & Company, p. 396.
3. Clifford, W. M.: The Effect of Cooking on the Digestibility of Meat, Biochem. J. **24**: 1728, 1930.

PNEUMONIA AMONG FILIPINOS TRAVELING IN THE STEERAGE

The control of epidemic cerebrospinal fever among Filipinos in the steerage of ships from the Orient has been reviewed by Geiger.[1] The epidemiology of pneumonia in these people has often been contrasted with that of epidemic meningitis. In studying means for the prevention of these cases, it has been determined that special attention must be given to one of the most important contributory accessory factors: detention in the "quartels" in Manila. The length of the detention, the absence or presence of respiratory infections within the group previous to sailing, the weather at the time of embarkation and immediately afterward, whether sufficient clothing and bedding were given or properly used, the question of ventilation or the intelligent use of available facilities in the steerage by the ship surgeon, and the administration of suitable physical exercises and suitable diets en route must also be investigated.

The absence of specific laboratory information as to causative type strains allows certain freedom in interpretation as to type. In this connection, Monserrat[2] published an article which indicates that the prevailing type of pneumococcus in Filipinos is type IV. These data studied as to pneumonia in Filipinos on ships were from December, 1928, to December, 1930, and included fifty-seven voyages by various ships of one transportation company. The number of cases of pneumonia occurring on these ships in the two year period was 277, with 43 deaths, a case mortality percentage of 15.6. This figure corresponds in general quite exactly with the mortality for type IV pneumococcus. The clinical type was invariably classified as lobar.

When the month of sailing from Manila is considered, there is a curious consistency in cases appearing on the ships in practically every month except January; in fact, there were no cases on any ship sailing in January. The largest outbreaks on any one ship occurred in April, with 49 cases and 2 deaths; in

1. Geiger, J. C.: Am. J. Pub. Health **21**: 163 (Feb.) 1931.
2. Monserrat, C.: J. Philippine Islands M. A. **10**: 424 (Oct.) 1930.

December, 21 cases and 5 deaths, and two outbreaks in March of 13 cases and no deaths and 10 cases and no deaths, respectively.

Cases occur far more frequently on some ships than on others and it might be important to study the reasons for the absence of the disease on certain ships, taking into consideration the sizes of the group and particularly whether the sterilization of mess equipment and other isolation technic was fully carried out.

In nineteen instances, pneumonia developed on the first or second day after sailing from Manila. This is perhaps an indication that sufficient care may not have been used at Manila in eliminating cases of respiratory infection, or that exposure to weather conditions at the time of sailing was unusually severe. These data, though incomplete, furnish another indication of the need for careful selection of medical personnel on ships and its thorough training in the control of communicable disease. Epidemic conditions as to disease may arise or subside in localities and be reflected by cases on ships without apparent reason. Furthermore, experiences of health officials in controlling pneumonia and epidemic meningitis have not added much information. In the final analysis, any precise control measures appear futile and the reasons for exaltation of the causative organisms to epidemic form or racial or locality susceptibility are most obscure. Geiger strikes at the most probable fundamental reason as to epidemic meningitis and probably pneumonia on ships when he states that "contact is, therefore, very intimate unless properly controlled, and racial characteristics of the Filipino insure that such contact under ordinary conditions is inevitable."

TEN MILES ABOVE THE EARTH

Newspapers throughout the world recently gave to their readers the thrilling story of the successful ascent of Prof. Auguste Piccard and Charles Kipfer in a balloon to the height of 52,462 feet—approximately ten miles. This marks a new record in the conquest of the air and exceeds the best previous ascent, in an airplane, by several thousand feet. It involved penetration of the so-called stratosphere, the region beyond six miles in the upper air where there is perpetual Arctic cold, where the air is too thin for man to live, where there are no clouds, and where "stars shine by day in a purple sky."

The alleged purpose of the attempt was to secure certain data of interest to physicists. Scarcely had the feat been accomplished when an outstanding metropolitan daily [1] remarked in its editorial columns:

> Now that the world has heaved its sigh of relief at the almost miraculous descent to safety of Professor Piccard and his assistant, Dr. Kipfer, who can fail to wonder whether their elaborate effort was worth the risk? Even though we must await a detailed analysis of Professor Piccard's records before passing final judgment upon them, there is every reason to doubt the scientific value of the most skillfully conducted balloon voyage to a height of ten miles.

This criticism relates to the circumstance that the upper regions of the atmosphere can be—and have been—investigated by means of small, unmanned sounding balloons which supply pertinent physical facts such as those relating to cosmic rays. Automatic recording instruments have thus been raised 20 miles without the slightest jeopardy to human life. The medical world, on the other hand, has been concerned with man's ingenuity in overcoming the handicaps that present themselves to human life at high altitudes.

Aviation has done much to stimulate interest in such problems. Great altitude presents certain desired advantages for the flier at times; yet man has no satisfactory powers of direct adjustment to the living requirements of the upper reaches of the atmosphere. The foremost difficulty lies in the lowered barometric pressure and the attendant lack of oxygen. Altitude sickness, long known as mountain sickness and latterly as mal des aviateurs, arises at altitudes sometimes as low as 10,000 feet, ordinarily at 15,000 feet; a few trained persons can combat it successfully at 20,000 feet. The symptoms depend not only on the nature of the individual and his physical condition, but also on various intricate contingencies, especially on the amount of physical exertion made in ascending; that is, on whether the ascent is performed by climbing or by passive carriage on horse, on railway train, in a balloon, or in an airplane.

The action of gradually developing want of oxygen at very high altitudes is insidious as dangerous effects may develop with a dramatic suddenness. In 1862 the well known meterologist, Glaisher, and his assistant, Coxwell, ascended in a balloon. Glaisher first noticed at an altitude of about 26,000 feet that he could not read his instrument properly. Shortly after this his legs were paralyzed and then his arms, though he could still move his head. Then his sight failed entirely and afterward his hearing, and he became unconscious. The balloon during the ascent had reached an altitude of 30,000 feet. Human ingenuity has made it possible to overcome the immediate handicaps. Cold can be counteracted by suitable warming devices. Oxygen can be supplied from special sources to meet the needs of respiration. In 1901 Berson and Suering managed with the aid of an oxygen supply to rise above six miles into the air. Several aviators have done better. Both planes and their fliers call for oxygen reinforcements where the indispensable gas is scarce. In the newest venture of Piccard the ingenious device of a sealed air-proof metal cabin was used. Air conditions could thus be adapted, somewhat as in a submarine. Herein lies the novelty and interest to the physician. It represents a conquest of forbidding nature in a region of intense cold, occasional heat and a barometric pressure about one-tenth that at sea level.

1. Editorial: Piccard and the Stratosphere, New York Times, May 30, 1931, p. 14.

Current Comment

NEW EVIDENCE REGARDING REABSORPTION IN THE KIDNEY

Only a venturesome person will essay to express a final judgment regarding the prevailing theories of kidney secretion. Many readers will recall the debated opinions as part of their collegiate excursions into the domain of renal physiology. The larger problems at issue can be briefly summarized by the questions whether the flow in the kidney glomeruli is due to physical or physiologic (that is, secretory) processes, whether the evidence of secretory action in the tubules is cogent, and whether reabsorption of fluid and other substances occurs in the tubules. Every textbook of physiology states the views and the experimental evidences. The names of Bowman, Heidenhain, Ludwig, Cushny, Wearn and Richards are prominent in the history of the subject. Predominant belief seems to favor the filtration hypothesis for the glomerulus. The majority opinion also assumes some unique sort of reabsorption in the tubules. In disease the kidneys may lose the power to concentrate some of the blood constituents but not necessarily others. An exceptionally interesting contribution has just been made from the Rockefeller Institute for Medical Research in New York by Rhoads, Van Slyke, Hiller and Alving.[1] They have succeeded in drawing the kidney of an experimental animal out of the body cavity and suturing the organ under the skin of the back, with the renal vein located in such a position that it can be punctured through the skin with a needle. The metabolism of the kidney has been studied by simultaneous analyses of samples of arterial and renal blood and of urine secreted during the observation periods. The occurrence of renal blood urea contents, markedly higher at times than arterial urea contents, appears to be proof of the occurrence of reabsorption of urea in the kidneys. At any rate the ingenious method of study promises to throw new light on problems of renal function.

THE RESPONSES TO MUSCULAR WORK

A distinguished physiologist once described the respiration and the circulation as the servants of the muscles. It is at once obvious from this that the capacity for muscular work—for the physical exertions of the body—must be modified in no small measure by the capacities of the respiratory and circulatory apparatus of the organism to be adjusted to augmented tasks. The determination of the physical abilities of persons involves the efficiency with which an adequate amount of the indispensable oxygen is supplied to the active muscles. Schneider [2] has remarked that in the accomplishment of this service several devices are employed, and any one of these may be called into action more at one time than at another. When the limit of ability to supply oxygen is being approached, or is reached, the failure of compensation may be due to the inadequacy of one, or more, or all of these devices. There is, as Schneider adds, a close relationship between oxygen absorption, the respiratory minute-volume, the respiratory rate, the frequency of the heart beat, the oxygen pulse and the performance of muscular work. What function limits voluntary physical effort? The usual answer implies that the circulation is the more important factor in the limitation of muscular work. Indeed, one group of British physiologists [3] states that the unequal abilities of able-bodied persons to run or walk up hill without distress depend on the capacities of their hearts—the adjustment of circulatory rates to afford the requisite oxygen intake. Another group of investigators [4] questions this simple explanation and concludes that voluntary effort is limited by failure of the functional capacity of the cardiorespiratory system as a whole, not by premature failure of any one member of this team. The latest research—that of Schneider at Wesleyan University in Middletown, Conn.—indicates that during moderate exertion, before what is termed the "crest-load" is reached, there is a linear relationship between the work (as the load is stepped up) and the amount of oxygen absorbed, the pulse frequency, the oxygen pulse or amount of oxygen consumed from the blood of one systolic discharge of the heart, and the frequency and volume of breathing. The limit of voluntary effort, when this parallelism fails, seems to be due primarily to failure of the heart to augment proportionately to the increased demands of the tissues for oxygen. Another limiting factor was indicated in the failure of the oxygen-pulse to augment in the usual degree. This is interpreted as being due to an inability to step up adequately the coefficient of utilization of oxygen. There are conditions of work under which the heart is unable to respond with any further increase in frequency of beating. There are evidently cases also in which additions to the load of work may be made for which the body cannot further increase its intake of oxygen.

1. Rhoads, C. P.; Van Slyke, D. D.; Hiller, Alma; and Alving, A.: Studies of Renal Metabolism, Proc. Soc. Exper. Biol. & Med. **28**: 776 (April) 1931.
2. Schneider, E. C.: A Study of Responses to Work on a Bicycle Ergometer, Am. J. Physiol. **97**: 353 (May) 1931.
3. Hill, A. V.; Long, C. N. H., and Lupton, H.: Proc. Roy. Soc. London **97**: 155, 1925.
4. Clark-Kennedy, A. E.; Bradbrooke, H. N., and Owen, T.: J. Physiol. **61**: x, 1926; J. Physiol. **62**: xiv, 1927.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts at 10 a. m. on Monday and 10:30 on Saturday, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week is as follows:

June 15. Food for the Teeth.
June 20. Pioneers of Medicine.

Five minute health talks may be heard over the Columbia Broadcasting System on Monday, Wednesday, Thursday and Saturday, from 1 to 1:05 p. m., Chicago daylight saving time.

The program for the week is as follows:

June 15. We Speed and We Die.
June 17. Early Leaders in Medicine.
June 18. Making the Blind See.
June 20. Periodic Health Examinations.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Society News.—Dr. Arno B. Luckhardt, professor of physiology, University of Chicago, gave two lectures at the University of Alabama School of Medicine, May 7-8, on "The Parathyroid Glands, Their Pathology and Physiology" and "High Lights and Shadows in the History of the Discovery of General Anesthesia."

COLORADO

Congress of Ophthalmology and Oto-Laryngology.—The ninth annual summer graduate course and the Colorado Congress of Ophthalmology and Oto-Laryngology will be held, July 20-August 1, under the sponsorship of the eye, and the ear, nose and throat state societies. The class will be divided into small sections for demonstrations and clinics. The congress will be held, July 24-25, for the presentation of special papers. At the completion of the program, there will be a motor trip into the Rocky Mountains, followed by a complimentary banquet at the Mountain Home of the Motor Club of Colorado. Among those who will give special courses this year are Drs. Cecil S. O'Brien, Iowa City; Francis H. Adler, Philadelphia; Harvey J. Howard, St. Louis; French K. Hansel, St. Louis; Albert C. Furstenberg, Ann Arbor, and William J. McNally, Montreal. Applications for the course, accompanied by check ($50, the total fee) should be sent to Dr. Harry L. Whitaker, corresponding secretary, 1612 Tremont Place, Denver.

CONNECTICUT

State Medical Election.—Dr. Charles C. Gildersleeve, Norwich, was elected president of the Connecticut State Medical Society at its annual meeting, May 21, and Dr. Charles W. Comfort, Jr., New Haven, reelected secretary. The next annual session will be held at New Haven, May 25-26, 1932.

DISTRICT OF COLUMBIA

Society News.—Dr. Elliott P. Joslin, Boston, addressed the George Washington University Medical Society, recently, on diabetes. Dr. Donald C. Balfour, Rochester, Minn., addressed the society, recently, on the latest method of treating surgical stomach disorders.——Dr. Harry Friedenwald, Baltimore, addressed the Jacobi Society of Washington at its annual banquet, April 11, on "Medicine and Morals."——Dr. Charles Armstrong, U. S. Public Health Service, addressed the Medical Society of the District of Columbia, April 8, on "Postvaccination Encephalitis," and Dr. Joseph F. Elward, "Subphrenic Abscess"; Dr. Fred O. Coe reported a case of ruptured kidney and ruptured ureter, with pyelograms. A symposium on acute respiratory infections in children was conducted before the society, April 22; speakers were Drs. Joseph S. Wall, James M. Moser, Preston A. McLendon and Samuel A. Alexander. Dr. Leon S. Gordon, among others, addressed the society, April 29, on "Further Studies on Intracranial Hemorrhage of the New-Born." Drs. Mario Mollari and Bernard W. Leonard addressed the society, May 13, on "Sickle Cell Anemia" and "Effect of Digitalis on Heart Failure and Output," respectively.

ILLINOIS

Hospital News.—The new James Nelson and Anna Louise Raymond building of the Country Home for Convalescent Children, Wheaton, was dedicated, May 20. The Home is affiliated with the University of Chicago. Dr. Nathaniel Allison, Chicago, gave the dedicatory address.

Society News.—The meeting of the Peoria City Medical Society, June 2, was addressed by Drs. John D. Koucky, Chicago, on "Differential Diagnosis of Abdominal Pain" and Lindon Seed, Chicago, "Surgical Treatment of Exophthalmic Goiter."——Dr. Hermon H. Cole, Springfield, was elected president of the Central Illinois District Medical Society, April 30, in Pana.——Dr. William Engelbach, New York, will address the Schuyler County Medical Society on "Diagnosis and Treatment of Endocrine Disorder," June 20, in Rushville.

Free Serum for Infantile Paralysis.—Convalescent serum for treating preparalytic cases of infantile paralysis is available free from the state department of public health. The serum has been taken from healthy individuals who have recovered from infantile paralysis. The serum, when given to patients before the onset of paralysis, is of value in preventing paralysis, experiments have shown. The department of public health reports about three times as many cases of the disease now as during the corresponding period of 1930. Forty-eight cases were reported in the first nineteen weeks of 1931, as against seventeen in 1930. The greatest number of cases usually occurs in the period between June and November. Physicians may obtain the serum by addressing the state director of public health, Springfield.

Chicago

Homecoming Week at Rush.—Special alumni clinics will be held and have been arranged for June 15-16 as a special feature of Rush Homecoming Week. The Rush Alumni Association will hold its annual meeting, June 16, at the Congress Hotel, preceding the annual dinner of the faculty and alumni at 6:30 o'clock. Dr. James B. Herrick, 1888, will be toastmaster at the Rush banquet.

IOWA

State Medical Election.—At the annual meeting of the Iowa State Medical Society, May 15, Dr. Channing G. Smith, Granger, was installed as president; Dr. Bert L. Eiker, Leon, was made president elect, and Dr. Robert L. Parker, Des Moines, was reelected secretary. The next annual session will be held in Sioux City in May, 1932.

Baker's Radio Station Ordered Off the Air.—Station KTNT, operated by Norman Baker at Muscatine, was ordered off the air by the Federal Radio Commission, June 5, according to the Chicago *Tribune*. In taking this action, it is reported, the commission sustained the recommendation of its chief examiners who found that Baker used the station as a "private mouthpiece" in promoting business interests in which he was engaged, and in attacking the medical profession, and other individuals and organizations. It was pointed out that Baker is the owner of about twelve enterprises in Muscatine, including a newpaper and a mail order business.

Society News.—A symposium on focal infection was presented before the Greene County Medical Society, Jefferson, March 12, by Drs. John R. Black and James M. Jackson, Jefferson, and Leonard A. West, Des Moines.——Dr. Charles H. Mayo, Rochester, Minn., addressed the Kossuth County Medical Society, Algona, March 20, on "Preoperative Preparation and Its Effect on Postoperative Results."——Dr. Millard F. Arbuckle, St. Louis, among others, addressed the Lee County Medical Society, May 7, on "General Consideration of Our Present Conception of Sinus Disease."——Drs. John B. Potts and Arthur D. Dunn, Omaha, addressed the Linn County Medical Society, March 12, on "Chronic Hyperplastic Maxillary Sinusitis and Its Relation to Bronchial Asthma and Focal Infections." Dr. Fred M. Smith, Iowa City, addressed the society, April 9, on "Arteriosclerotic Heart Disease."——At the annual clinic held by the staff of the Des Moines Clinic, April 16, among others, Drs. John W. Dulin, Iowa City, spoke on "Anatomy of the Hand in Relation to Infections," and G. D. Lacey, D.D.S., "Focal Infections of Dental Origin." Visiting physicians were guests of the clinic staff at a banquet and smoker in the evening.——Drs. Preston T. Brown and Edwin L. Rypins, Iowa City, addressed the Johnson County Medical Society, May 6, on "Radium in Treatment of Carcinoma of the Cervix" and "X-Ray Therapy and Its Use in Carcinoma of the Cervix," respectively.——Drs. Francis A. Ely, Hiram B. Henry and Russell C. Doolittle conducted a symposium on psychoneurosis before the Des Moines Academy of Medicine and the Polk County Medical Society, April 28.——The Iowa State Medical Women Society recently elected officers as follows: Drs. Grace M. Sawyer, Woodward, president; Zella White Stewart, Iowa City, vice president; Nelle P. S. Noble, Des Moines, secretary; Jeannette Dean Throckmorton, Des Moines, treasurer.

MARYLAND

Henry Barton Jacobs Room in Library.—A room in honor of Dr. Henry Barton Jacobs, Baltimore, has been established in the Welch Library, Johns Hopkins University School of Medicine. Dr. Jacobs has done much toward the development of medical education in Maryland. He has given to the library his collection of medical books and treatises, which includes more than 5,000 volumes, among which is the first edition of Jenner's "Inquiry Into the Causes and Effects of Varicolae Vaccinae," published in 1798. The installation is expected to be completed in September.

Bacterial Standards for Milk.—The state board of health recently adopted amendments to the milk regulations which establish bacterial standards for milk and cream to be sold in Maryland towns and cities. The sale of milk and cream containing in excess of 200,000 bacteria per cubic centimeter in raw milk and in excess of 30,000 bacteria per cubic centimeter in pasteurized milk is prohibited. Compliance with the bacterial standards will be required of milk producers and dealers. Those whose milk is found to contain excessive quantities of bacteria will be given an opportunity to correct conditions.

Child Health Conference.—The healthmobile of the bureau of child hygiene of the state department of health started out in May on a tour of Southern Maryland. It is arranged especially for the health examination of babies and for boys and girls who will be old enough to enter school in the fall. Special attention is paid to the general health of the child; to evidences of good or faulty nutrition; to conditions of the nose and throat; to the chest; to posture, hearing, vision and teeth, and, in the case of children who are getting ready for admission to school in the fall, whether or not they have been successfully vaccinated against smallpox. When treatment is required, mothers are advised to consult their family physician. A record of each examination is kept and a copy of the results sent to the family physician.

MASSACHUSETTS

Department of Preventive Medicine Established.—Under a grant of the Commonwealth Fund of New York a department of preventive medicine is being established at Tufts College Medical School. It is planned to make this a clinical department so that students may be taught preventive medicine from the standpoint of the individual patient. The aim at Tufts College Medical School will be to equip students so that they may feel responsibility for preventive problems in dealing with actual cases. Dr. Dwight O'Hara, Waltham, has been appointed professor of this department.

Society News.—Dr. Walter T. Garfield, Boston, addressed the Belmont Medical Society, April 24, at Belmont on "Skin Manifestations of Syphilis."——Dr. Ross Golden, New York, gave a discussion of some of "The Less Common Sources of Abdominal Symptoms" before the New England Roentgen Ray Society, April 17.——At the annual meeting of the Plymouth District Medical Society, April 16, a discussion of nonpulmonary tuberculosis was held by Drs. George L. Parker, Richard C. Cooke and Peter Ferrini, all of Middleboro, and Louis Alpert, Boston. Dr. John J. McNamara, Brockton, was elected president for the ensuing year, and Dr. George A. Moore, Brockton, secretary. Dr. George R. Minot, Boston, addressed the society at Abington, May 21, on "Adequate Treatment of Anemia."——Drs. Abraham Myerson and Julius Lonian addressed the Massachusetts Psychiatric Society, May 1, in Boston, on "Dynamics of Intracranial Pressure Conditions, with Special Reference to the Internal Jugular and Carotid Puncture," and Dr. Samuel S. Cottrell, Harding, "Encephalitic Sequelae and Their Treatment."——Dr. Irving J. Walker, Boston, addressed the Middlesex South District Medical Society in Cambridge, April 29, on "Some Changing Aspects in Surgery."——The Neisserian Medical Society of Massachusetts devoted its morning session, May 12, to clinics on gonorrhea in the male and female. The afternoon meeting was given to a discussion of sociological and public health.——Dr. Frank M. Howes, New Bedford, spoke on "Angina Pectoris and Its Treatment," and Dr. Paul D. White, among others, on "Precordial Pain and Tenderness" at a meeting of the cardiac course of the New England Heart Association, May 13, in Boston.

MICHIGAN

Annual Report of Children's Fund.—According to the second annual report of the Children's Fund of Michigan, covering the period May 1, 1930-April 30, 1931, appropriations for the year equaled $1,166,024.48. The work of the fund has centered in four major divisions: child health, child guidance, research and dependency. Dr. Bernard W. Carey, Detroit, is director of the child health division. There are 103 persons comprising the professional staff of physicians, health officers, dentists, nurses and health workers; 8,981 children were protected against diphtheria and 11,293 against smallpox. The largest volume of work was done in mouth hygiene by the twenty-two dentists and four oral hygienists administering to the needs of the children of thirty-five counties in Michigan and two suburban districts in the Detroit metropolitan area. The regular dental staff made 73,471 examinations, gave prophylaxis to 17,558 children, inserted 42,870 fillings and made 21,070 extractions. Thirty-three nurses are in the fund's service, covering thirty-two counties; 40,439 inspections were given to school children and 16,006 visits made in the interest of infants, preschool and school children. Two consolidated county health units were added to the two established last year. Unit number 3 consists of the counties of Emmet, Charlevoix, Antrim and Otsego, and unit 4 consists of the counties of Cheboygan, Presque Isle, Montmorency and Alpena. The purpose of such a unit is to show that it is practicable for counties with limited taxable resources to unite in a health district for the welfare of children. Two physicians engaged in the infant and prenatal program in twelve counties reached 3,000 children and conducted 365 classes with a total attendance of 5,793. The state department of public instruction, using a subsidy from the Children's Fund, completed a course in health education especially adapted for teachers in rural areas. Teacher training schools at Marquette, Ypsilanti, Kalamazoo and Mount Pleasant were given grants with which to engage instructors in health education. A grant was made also to Marygrove College in order to inaugurate health education in the parochial schools; another grant influenced the county normal schools. In the program for the correction of visual defects, which has been in operation about seven months, 1,586 children have been examined, and 1,005 pairs of glasses procured. The Northern Michigan Children's Clinic was completed and dedicated, June 11.

MINNESOTA

Dr. Scammon Returns to University of Minnesota.—Richard E. Scammon, Ph.D., has been appointed to the newly created position of dean of medical sciences at the University of Minnesota. This position, it is said, will not affect the status of Dr. Elias P. Lyon, who is dean of the medical school at the university. It is reported that Dr. Scammon's new duties are not confined to an administrative jurisdiction but are primarily concerned with educational programs and relationships. Dr. Scammon recently resigned as dean of the division of biologic sciences at the University of Chicago. Before accepting the latter position he had been at the University of Minnesota for several years.

MISSOURI

State Medical Election.—At the annual meeting of the Missouri State Medical Association, May 13, Dr. John Frank Harrison, Mexico, was installed as president; Dr. Joseph W. Love, Springfield, was made president elect, and Dr. Edward J. Goodwin, St. Louis, was reelected secretary. The next annual session will be held at Jefferson City in 1932.

Society News.—Dr. Anne Walter Fearn, Shanghai, China, spoke on "China: Its Medical, Social and Political High Lights" at a meeting of the St. Louis Medical Society, May 5. Dr. Fearn has practiced medicine in China for thirty-eight years.——The Howell-Oregon-Texas County Medical Society was addressed by Drs. Cleveland H. Shutt and Herluf G. Lund, St. Louis, March 26, on "Gallbladder Disease and Complications" and "Obstruction in the Upper Urinary Tract," respectively.——"Closed Reduction and Treatment of Fractures" was the subject of Dr. Frank D. Dickson, Kansas City, before the Jasper County Medical Society, Joplin, April 7.——Dr. Marion L. Klinefelter, St. Louis, spoke on fractures before the Greene County Medical Society, Springfield, April 10.——At a meeting of the St. Louis Medical Society, March 31, Drs. William E. Leighton, Roland M. Klemme and Bernard J. McMahon spoke on the surgical treatment of acute suppurative meningitis.——Dr. Willis E. Keith, Kansas City, was elected president of the Kansas City Society of Ophthalmology and Otolaryngology, April 16; Drs. Morris B. Simpson, Kansas City, and Edwin N. Robertson, Concordia, Kan., vice presidents, and Drs. Oliver S. Gilliland and Homer A. Beal, Kansas City, secretary and treasurer, respectively.

NEBRASKA

Health at Omaha.—Telegraphic reports to the U. S. Department of Commerce from eighty-one cities with a total population of 36 million, for the week ended May 30, indicate that the highest mortality rate (19.7) appears for Omaha, and the rate for the group of cities as a whole, 11.2. The mortality rate for Omaha for the corresponding period last year was 13.1, and for the group of cities, 11. The annual rate for eighty-one cities for the twenty-two weeks of 1931 was 13.3, as against a rate of 13 for the corresponding weeks of 1930. Caution should be used in the interpretation of these figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits, or that they have a large Negro population may tend to increase the death rate.

NEW YORK

Personal.—Dr. Silas J. Banker, Fort Edward, was recently presented with an engraved certificate by the Washington County Medical Society to commemorate the completion of his fiftieth year of medical practice.

Society News.—A moving picture on "Periodic Health Examination" was presented before the Medical Society of the County of Queens, May 26.——Dr. Dana W. Atchley, New York, addressed the Dutchess-Putnam Medical Society, May 13, in Poughkeepsie on "Medical Shock."——Dr. Milton C. Winternitz, New Haven, Conn., among others, spoke on the importance of a specialty before the Dental Society of the State of New York, May 12, in New York.——The Medical Society of the County of Washington was addressed, May 12, in Cambridge, among others, by Dr. Frank Vander Bogert, Schenectady, on "Feeding of Sick Children."——Dr. Lynn L. Fulkerson, New York, addressed the Broome County Medical Society, Binghamton, April 7, on "The Endocrine Glands in Relation to Gynecology."——Dr. James N. VanderVeer, among others, addressed the Suffolk County Medical Society, Patchogue, April 8, on medical economics.——The Medical Society of the County of Erie was addressed, May 18, by Drs. Richard Kovacs, New York, on "Medical and Surgical Diathermy"; James C. Elson, Madison, Wis., "Physical Therapy in Poliomyelitis," and Homer J. Knickerbocker, Geneva, "Physical Therapy in Traumatic Conditions and Industrial Work."——The annual Conference of Health Officers and Public Health Nurses will be held at Saratoga Springs, June 29-July 1, with headquarters at the Grand Union Hotel. Among others, Drs. Philip Van Ingen, New York, will speak on "New Era in Child Health"; Thomas Parran, Jr., Albany, "The Control of Syphilis," and Bernard McD. Krug, Goshen, "Coordinating the Work of Health Officers and Public Health Nurses."

New York City

Typhoid Among Wedding Guests.—Two persons died and fifteen others were stricken with typhoid as the result of eating chicken salad prepared by a typhoid carrier for a wedding dinner in the Bronx, according to the newspapers, May 27. One hundred other guests were notified, and all are under the supervision of the city health department. A 70 year old woman was the unlisted typhoid carrier who had been called in at the last moment to assist in preparation of the wedding supper. Of the fifteen who are ill, seven are in New York, and the others are in Stamford and Riverside, Conn.

Diphtheria Death Rate in Foreign Language Groups.—Foreign language speaking groups still have the highest diphtheria death rate, according to the mortality report for 1930 filed by the Diphtheria Prevention Commission. Although the death rate from diphtheria is still high, the figures show a decrease of 74 per cent in the Italian group since 1928. Deaths in the Jewish group decreased 82 per cent. Health Commissioner Wynne says the decrease has been possible by the action of the health commission in placing toxin-antitoxin within the reach of all, but the problem will only be solved by the immunization of all children.

Twelve Points in Noise Abatement.—The Noise Abatement Commission has made public "twelve silent points" which every citizen may use to abate noise:

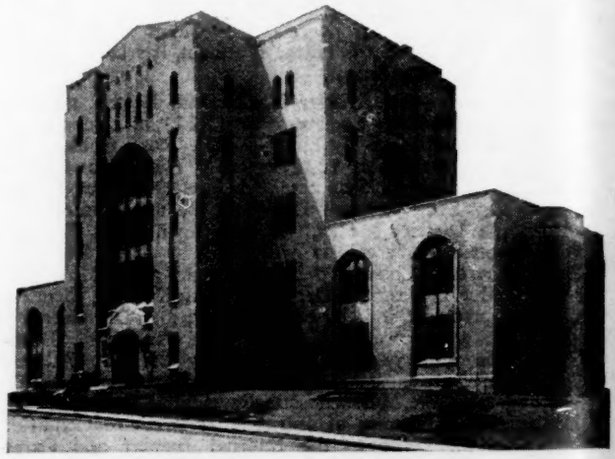
1. Radio loud speakers in front of shops are forbidden by city ordinance. If a citizen is disturbed by such illegally operated loud speakers, it is his duty to notify the police officer on the beat or the precinct headquarters.
2. Loud or excessive noise from radios and other amplifying devices that disturb the "comfort, quiet or repose of persons" in the neighborhood are prohibited by a section of the Sanitary Code. This enables the person disturbed to complain to the health department, specifying the exact place and the times of the disturbance.
3. You may stop noisy trucks and deliveries by notifying the police department of the name of the firm operating the noisy vehicle and, if possible, giving the license number of the vehicle itself.
4. If a company in your vicinity disturbs you by blowing a whistle to call its employees to work, notify the health department.
5. Except on the Fourth of July, it is against the law to discharge any fireworks without a license. Since cap pistols are included, anyone disturbed by the noise of these dangerous toys should notify the police.
6. The maintenance of a noisy animal or bird is prohibited by the Sanitary Code. Those disturbed should notify the health department.
7. If building operations are unnecessarily noisy, the health department should be notified. A sanitary inspector will be assigned to attempt to come to some agreement with the contractor that will lessen the noise.
8. In the case of clatter produced by ash and garbage collection, those disturbed should notify the sanitation department or, in case the collection is handled by a private company, the police.
9. When milk delivery is unduly noisy, the individual milk companies should be notified or the policeman on the beat advised of the time and place of the disturbance.
10. When doormen's whistles cause annoyance, the matter should first be taken up with the superintendent of the building and then, if there is no response, with the police department.
11. Tooting of automobile horns to call the attention of people within doors should be reported to the policeman on the beat.
12. If you wish further information on noise and its control, the Noise Abatement Commission asks you to send a letter stating your problem to its office in the health department building, 505 Pearl Street.

The Noise Abatement Commission was organized to discover the facts about city noise, to bring these facts to the attention of the public and to work out procedure by which the noise could be abated. It is not the function of the commission to enforce laws.

OHIO

State Medical Election.—At the annual meeting of the Ohio State Medical Association, May 13, Dr. Daniel C. Houser, Urbana, was installed as president; Dr. Herbert M. Platter, Columbus, was made president elect, and Mr. Don K. Martin, Columbus, reelected executive secretary. The next annual session will be held at Dayton in May, 1932.

Research Foundation at Children's Hospital.—The Children's Hospital Pediatric Research Foundation in Cincinnati was dedicated, May 20. The foundation which is housed in the Research and Clinic Building of the Children's Hospital was established in January, 1928. The cost of the building with equipment is $800,000, and it has an endowment of $3,000,000. Mr. William Cooper Procter donated the entire amount. The new structure contains laboratories for chemistry, bacteriology and metabolism, animal quarters, set of shops, medical illustration and photography unit, library, auditorium, store rooms and offices. It also houses the main pharmacy of the hospital, recreation facilities and a complete outpatient



department which units are not directly connected with research. The outpatient department is so arranged that from the time a patient enters until he leaves, he has no contact with any other patient. He waits in a cubicle, is weighed and measured in another set of cubicles, and passes on to individual examining rooms. There is also an isolation unit for children suspected of having contagious disease. The Children's Hospital is linked to the University of Cincinnati College of Medicine in care of patients, teaching and research. There is an affiliation whereby the professor of pediatrics in the college of medicine is the medical director, chief of staff and director in the Children's Hospital; this position is held by Dr. A. Graeme Mitchell. The staffs of the two institutions are largely the same. Dr. Leonard G. Parsons, professor of pediatrics, University of Birmingham, England, spoke at the dedication, among others, on "Pediatrics: a Backward and Forward Glance."

OKLAHOMA

Fall Clinical Conference.—The Oklahoma City Clinical Society will hold its annual fall conference, November 2-5, at the Oklahoma Club. The tentative program includes the following speakers: Drs. Hugh Cabot, Rochester, Minn.; Arthur Steindler, Iowa City; Lawrason Brown, Saranac Lake, N. Y.; James B. Herrick, Chicago; Thomas McCrae, Philadelphia; Franklin P. Gengenbach, Denver; Howard Fox, New York; Walter E. Dandy, Baltimore; Harry S. Crossen, St. Louis, and Richard A. Kern, Philadelphia.

Society News.—Dr. Richard D. Morris, Allen, discussed pneumonia before the April 10 meeting of the Hughes County Medical Society.——Drs. Charles R. Rountree and Wendell M.

Long, Oklahoma City, addressed the Okmulgee County Medical Society at Okemah, April 20, on "Treatment and Management of Fractures of the Elbow, Wrist and Ankle Joint" and "Uterine Bleeding," respectively.——Drs. William H. Olmstead, St. Louis, addressed the Garfield County Medical Society, April 9, on "Diseases Where Dietetic Treatment is Essential"; Porter P. Vinson, Rochester, Minn., "Diagnosis and Treatment of Cardiospasm"; John H. Musser, New Orleans, "Acute Infections," and Charles A. Elliott, Chicago, "Blood Pressure."

PENNSYLVANIA

Memorial Health Center.—The Angeline Elizabeth Kirby Memorial Health Center in Wilkes-Barre was dedicated, April 22. It is the gift of Fred Morgan Kirby in memory of his mother and was erected at a cost of more than $2,000,000. Mr. Kirby also provided a $600,000 endowment fund. The manager of the memorial will be Dr. Charles B. Crittenden, health officer of Wilkes-Barre. Dr. Crittenden is a former commissioner of the Tennessee State Board of Health, and, before assuming his duties in Wilkes-Barre, was health director of rural study for the American Public Health Association. It is reported that the city has surrendered the supervision of all of its health departments to the new center, and all branches of community health and welfare work will be housed in this building under one centralized control.

Philadelphia

Personal.—Dr. Ross V. Patterson, dean of Jefferson Medical College, and president of the Medical Society of the State of Pennsylvania, received the honorary degree of doctor of science, May 24, at the dedication of a new group of buildings at La Salle College.——Dr. John Chalmers Da Costa, Samuel D. Gross professor of surgery, Jefferson Medical College, was made honorary deputy chief of the fire department, in "gratitude for life long devotion to the fire-fighters' welfare."——Dr. William Gerry Morgan, Washington, D. C., President, American Medical Association, was the guest of honor at a reception, April 17, given by the Medical Club of Philadelphia.

Tumor Clinic Established.—The establishment of the Elizabeth Storck Kraemer Memorial Fund by a gift of $100,000 from Pierre S. and Lammot duPont will provide for the foundation and operation of a tumor clinic at Jefferson Hospital by Dr. William H. Kraemer, it is reported. The clinic will be operated as a subdivision of the surgical department of the hospital, and its object is research for the advancement in the knowledge of cancer along lines of surgery, x-ray, radium and chemical compounds. The department will be located on the fifth floor of the new Curtis Clinic building which is expected to be ready for occupancy in the fall. While this plan has no connection with the duPont Company, but is a personal interest of the contributors of the fund, it was founded for the express purpose of chemical and clinical research, engaging the interest of the chemical department of the company, it is reported.

Society News.—Drs. Samuel R. Meaker, Boston, and Isador C. Rubin, New York, addressed the Philadelphia County Medical Society, May 27, on "Treatment of Sterile Mating" and "Tubal Factor in Sterility," respectively. Dr. James R. McCord, Atlanta, Ga., addressed the society, May 13, on "Sterility and Pregnancy."——Dr. Isolde T. Zeckwer, among others, addressed the Physiological Society of Philadelphia, May 18, on "Spontaneous Insulin Resistance in Rabbits: Effect of Thyroidectomy on the Response to Insulin."——Dr. William J. Taylor, among others, addressed the Philadelphia Neurological Society, May 22, on "Surgical Treatment of Chronic Sciatica."——The Philadelphia Urological Society was addressed, May 25, by Dr. James F. McCahey on "Important Factors in the Onset, Course and Prognosis of Arthritis Complicating Gonorrhea," and Drs. Albert E. Bothe and Ernest Kip Robinson on "Pathological Changes in Testicles from Autopsy Material with Special Reference to the Finding of Blood Forming Cells."

TENNESSEE

Four Counties in Joint Meeting.—Dr. Horton R. Casparis, Nashville, spoke on "Tuberculosis in Children," May 28, in Harriman, at the first of four joint meetings to be held by the medical societies of Roane, Monroe, Loudon and McMinn counties. Other talks were given by: Drs. Luther L. Barnes, Sweetwater, "Diabetes Mellitus"; James Avery Leeper, Lenoir City, "Head Injuries"; James C. Wilson, Rockwood, "Syphilis in Social Work"; D. Paris Brendle, Englewood, "Ringworm." Motion pictures on "Colles Fractures" and "Hydrocele" were shown.

Society News.—Dr. Oswald S. Lowsley, New York, spoke on "Uroselectan and Other New Methods of Urologic Diagnosis and Treatment" before the Nashville Academy of Medicine, May 22, in Nashville.——Dr. George R. McSwain, Paris, addressed the Carroll, Weakley, Henry and Benton Counties Medical Society, April 7, on "Surgery in Pernicious Vomiting and Eclampsia."——Dr. Oliver W. Hill, Knoxville, addressed the Knox County Medical Society, May 5, on "Case of Miliary Tuberculosis in Child Three Months Old" and "Undulant Fever in Child Seventeen Months Old."——The Roane County Medical Society was addressed, April 21, by Dr. George E. Wilson, Rockwood, on "Pyothorax."——Drs. William S. Rude, Ridgetop, and Morris B. Garner, Madison, addressed the Robertson County Medical Society at Springfield, April 21, on "Surgery in Tuberculosis" and "Life as Witnessed by a Country Doctor," respectively.

UTAH

Society News.—Dr. Rudolph L. Dresel, San Francisco, was guest of honor at a banquet given by Carbon County Medical Society, recently. Dr. Dresel read a paper on "Compression Fractures of the Spine."——Dr. Lester A. Stevenson, Salt Lake City, among others, read a paper on "Gunshot Wound of Lung" before the Salt Lake County Medical Society, April 13.——Dr. John W. Aird and his son, Dr. John L. Aird, Provo, who are leaving for California, were given a farewell banquet by the Utah County Medical Society, recently.

WEST VIRGINIA

State Medical Election.—Dr. Albert H. Hoge, Bluefield, was elected president of the West Virginia State Medical Association at its recent annual meeting; he will assume office Jan. 1, 1932. Mr. Joe W. Savage, Charleston, was reelected secretary. The next annual session will be held at Parkersburg.

GENERAL

Average Decrease in Tuberculosis.—Reports furnished by health commissioners of forty-five large cities in the United States are the basis of statistics compiled by the New York Tuberculosis and Health Association showing that the average death rate from tuberculosis for these cities was 81.3 per hundred thousand of population in 1930 as compared with 87.3 in 1929. The total number of deaths from tuberculosis in 1930 was 24,674, as compared with 25,999 in 1929. In a compilation based on figures received from thirty-nine cities, 6,796 deaths of Negroes were reported in a total of 23,618.

Accident Prevention Contest.—One hundred and ninety-four class I lines and units recently participated, together with eight competing zones of the Pullman Company, in the Annual Steam Railroad Accident Prevention Contest. The awards are made for greatest reductions in casualty rates (killed and injured) among employees on duty in train, train service and nontrain accidents, and rates are determined on the basis of such casualties per million man-hours worked, according to the official records of the Interstate Commerce Commission. They conclude an initial seven-year drive launched in 1923. A comparison of the 1923 figures with those of 1930 show that there were 1,084 fewer fatalities on American railroads last year than in 1923 and 114,963 fewer injuries. This represents a 52.6 per cent reduction in fatalities and a 77.6 per cent reduction in injuries. The latter were reduced from 148,146 in 1923 to 33,183 the last year.

Pacific Northwest Medical Association.—The ninth annual meeting of the Pacific Northwest Medical Association will be held, June 25-27, in Seattle. The speakers this year and some of their subjects will be Drs. Arno B. Luckhardt, Chicago, "Studies on the Knee Jerk with Practical Application"; Dean Lewis, Baltimore, "Infections"; Charles R. Austrian, Baltimore, "Some Non-Tuberculous Basal Pulmonary Infections"; Arthur Elmer Belt, Los Angeles, "Perineal Prostatectomy; the Closed Method"; Samuel R. Cunningham, Oklahoma City, "Diagnosis and Treatment of Fractures of the Vertebral Column"; Frederick L. Reichert, San Francisco, "The Tics of the Cranial Nerves"; Owen H. Wangensteen, Minneapolis, "Diagnosis and Treatment of Acute Intestinal Obstruction"; William Dock, San Francisco, "Clinical Significance of the Electro-Cardiograph"; Leo G. Rigler, Minneapolis, "Roentgen Diagnosis of Pleural Disease"; Walter Simpson, Dayton, Ohio, "Tularemia," and Cyrus C. Sturgis, Ann Arbor, Mich., "Treatment of Pernicious Anemia." Dr. Robert F. Ridpath, professor of rhinolaryngology, Temple University School of Medicine, Philadelphia, will conduct daily a series of lectures and demonstrations in otolaryngology.

Society News.—The third annual session of the Association of Record Librarians of North America will be held in New

York, October 12-16.——At the annual meeting of the American Society of Regional Anesthesia at the New York Academy of Medicine, April 7, Dr. Louis Gaston Labat, New York, was made honorary president; Dr. Julius Lewis Amster, president; Dr. Edward M. Livingston, vice president; Dr. Anthony S. Bogatko, treasurer, and Dr. Hippolyte M. Wertheim, secretary. ——The Western Branch of the American Urological Association will hold its seventh annual session, November 6-7, at San Francisco.——The tenth annual Congress of Anesthetists will be held in New York, October 12-16, during the week of the Clinical Congress of Surgeons. Headquarters will be at the McAlpin Hotel.——The National Child Labor Committee will have its twenty-sixth annual conference, June 16, in Minneapolis. Dr. Lee H. Ferguson, Cleveland, among others, will speak on "Child Labor and Child Health," and Dr. Kendall Emerson, director of the National Tuberculosis Association, will preside.——Social hygiene meetings will be held in Minneapolis, June 14-20, at the time of the National Conference of Social Work. These meetings have been arranged by the American Social Hygiene Association in cooperation with the Health Council of the City of Minneapolis and the County of Hennepin, the state health department, the Woman's Cooperative Alliance, the bureau of social hygiene of the University of Minnesota and other local groups.

FOREIGN

Madame Curie Honored. — Mme. Curie was recently appointed honorary member of the Sociedad Española de Física y Química in a ceremony at the University of Madrid. Mme. Curie delivered several lectures in Madrid on radioactivity, descriptions of gamma, beta and alpha rays, apparatus to graduate the power of penetration of alpha rays and the velocity of beta rays. Mme. Curie came to Spain on the invitation of several national medical and scientific societies. In her lectures she referred to the discoveries made by Dr. Hess of Germany and Robert A. Millikan, Ph.D., of the United States.

Increase in Doctors and Dentists in Great Britain.—The 1931 Medical Register contains 55,291 names, an increase of 421 over the preceding year, and an increase of 1,151 over the average of the past five years, it is reported. The number of registrations during 1930 was 1,490, while 1,105 names which appeared last year are omitted from the present issue. The Dentists' Register contains 14,422 names, a slight increase over the year before. New registrations totaled 280. The sale of American pharmaceuticals and proprietary medicines to Great Britain totaled $3,264,000 in 1929, and the sale of United States dental preparations in the United Kingdom was $342,000.

Prize for Cancer Essay. — The Grand Council of the British Empire Cancer Campaign has announced the second Garton medal for studies in this field. The prize will be awarded after Dec. 31, 1933, to the person or group of persons who will submit the essay embodying the results of original investigations which, in the opinion of the judges, is the best contribution toward "The biological effects and mode of action of radiations upon malignant and other cells." Candidates must be British subjects domiciled in the British Empire and not at the time members of the Grand Council of the British Empire Cancer Campaign. The prize is a medal and £500, and investigations must be conducted, either wholly or in part, in the three years immediately preceding the year in which the prize shall be awarded. The contest for the first Garton medal closes Dec. 31, 1931. Further information may be obtained from the honorary secretary of the campaign, 12 Grosvenor Crescent, Hyde Park Corner, London, S. W. 1.

Society News.—Dr. J. Garel was elected president of the Society of Oto-Rhino-Laryngologists which was organized, March 1, for Lyons, France, and the neighboring district, and Dr. Sargnon, 5 Rue Victor Hugo, general secretary.——The Royal Society of Tropical Medicine and Hygiene recently purchased Manson House, 26 Portland Place, London, W. 1, and will move to its new house, June 24. The formal opening will take place in the autumn.——The seventh congress of the International Union of Protection to Childhood will be held in Paris in 1932. Further information may be obtained through 26 Boulevard de Vaugirard, Paris.——The seventh congress of pediatricians of the French language will be held at Strasbourg, October 5-7, with Prof. Paul Rohmer presiding. Subjects scheduled for discussion are: alimentary fevers, diagnosis and treatment of cerebral tumors in children, and latent and atypical forms of avitaminosis in early childhood. Registration for the congress should be addressed to Dr. Pierre Woringer, 18, Rue des Veaux, Strasbourg. A conference on organization for the protection of mothers and children in France, organized by the French committee of the International Union for the Protection of Children, will be held in Strasbourg, October 4. —— The Fifth National Congress of Pediatrics will be held at Granada, Spain, October 19-23. It will be divided into three sections: hygiene and puericulture; medical treatment of children, and surgery in children. Further details may be had from the secretary of the congress, Gran Vía 63, Granada, Spain. —— The Second International Congress of Actinology will be held in Copenhagen, August 15-18. Drs. A. Reyn and E. Reckling are the president and secretary, respectively, of the committee on organization. Further information may be obtained from Finsen institutet. Strandboulevarden, Copenhagen, Denmark.

CORRECTION

Radiologic Number. — In THE JOURNAL, May 23, page 1791, Sidney Lange, Cincinnati, whose type of service was given as roentgenology erroneously, should have credit for general radiology which includes short wave therapy and radium therapy.

Government Services

Graduate Work for Reserve Officers

Fourteen days inactive duty training will be given to medical reserve officers by the Mayo Foundation, Rochester, Minn., October 18-November 1, and Washington University School of Medicine, St. Louis, November 8-22. These medical centers are providing all facilities without charge to the government. The courses are so arranged that a reserve officer can devote his morning hours to any of the clinics or other purely medical professional studies he desires and the afternoon and evening to medico-military subjects. The first inactive duty training camp was held at the Mayo Foundation in 1929. All applications for the course of training at the Mayo Foundation should be made to the director of the Foundation through the surgeon, Seventh Corps Area, and applications to take the course at Washington University should be sent to the dean of the school of medicine through the surgeon, Seventh Corps Area. Applications made by medical reserve officers who reside outside of the Seventh Corps Area should be forwarded through their respective corps area commanders.

Army Personals

Lieut. Col. W. Lee Hart, relieved from duty as student at Army War College, Washington, D. C., and ordered to proceed to Omaha, seventh corps area, for duty; Major James M. Miller sailed from San Francisco for New York about May 2; on arrival there he proceeded to Edgewood, Md., for duty; Capt. Thomas M. England, relieved from duty in the office of the surgeon general, Washington, D. C., effective June 10, and proceeded to Columbus, Ohio, fifth corps area, for duty; Major George C. H. Franklin, relieved at the Panama Canal, Canal Zone, effective on completion of present tour of foreign service, on arriving in New York will proceed to Washington, D. C., for duty; Major Martin R. Reiber will sail from New York about September 23 for the Panama Canal; Capt. John D. Brumbaugh, having been found incapacitated for active service on account of disability incident thereto, his retirement has been announced; Major Martin F. DuFrenne will sail from San Francisco about June 17 for duty in the Hawaiian Department; Lieut. Col. William L. Sheep will sail from New York about August 7 for duty in Balboa Heights, Canal Zone; Capt. Eugene W. Billick, relieved at Panama Canal, and on completion of tour of foreign service is assigned to duty at Carlisle Barracks, Pennsylvania; Capt. Fletcher E. Ammons, relieved in the Hawaiian Department, and assigned to duty at the Fitzsimons General Hospital, Denver; Lieut. Col. Daniel P. Card, relieved from duty at Carlisle Barracks, Pa., about June 1, and assigned to Fort Ethan Allen, Vt.; Lieut. Col. George B. Foster, Jr., relieved from duty at Fort Ethan Allen and ordered to proceed to Fort Thomas, Ky.; Major Marvin C. Pentz, Plattsburg Barracks, N. Y., ordered to proceed to his home about May 24 to await retirement for the convenience of the government; Capt. John H. Dawson, now on sick leave at San Antonio, Texas, proceeded to his home about May 22 to await retirement; Lieut. Col. Ernest R. Gentry will sail from New York about August 7 for duty in Balboa Heights, Canal Zone; Col. Alexander Murray will sail about August 19 for duty in the Philippine Department.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 16, 1931.

The Medical Socialists' Program

As shown in previous letters, the socializing of medicine has gone a long way in this country by the establishment of maternity and child welfare centers, school clinics and the national health insurance act; also, the British Medical Association has produced a scheme to provide a medical service for every class covering the whole field of preventive and curative medicine. This almost complete socializing of the profession was not due to any desire of the profession or the association for medical socialism but to the fact that it is regarded as inevitable and that it was thought best that the profession should be early in the field and lay down lines acceptable to it. But there is a body of socialists in the profession, who have formed the Socialist Medical Association, and though their number is small they must have considerable influence with the present socialist government. The president is Mr. Somerville Hastings, M.P., a laryngologist. A presidential address just given by him shows how much further those who want socialism wish to go. Discussing the medical service of the future, he said that medicine would have much more to do with the prevention of disease. Every physician should have his mind directed into preventive channels. At present, preventive medicine takes but a small place in the curriculum of the medical student, and the laws of health are hardly taught at all. So much diagnosis and treatment have to be learned for the qualifying examinations that the preventive side is largely neglected. There must be more health propaganda and periodic medical examinations. People rarely come for this or for information as to the laws of health, because it costs money. There should be no economic barrier between the physician and his patient. Efficient treatment depends on the earliest recognition of disease. The question of expense, he said, should not be allowed to enter at all; also that the present economic dependence of the physician on his patient is bad in many ways. It may prevent the physician from giving wholesome but unpleasant advice and refusing to sign incapacity certificates. It may make him more concerned with externals than with an intimate knowledge of medical science.

The increasing complexity of medical science is rendering obsolete the physician who works alone and in competition with others. He is liable to degenerate professionally. In the medical service of the future, the team and not the individual physician must be the unit. But the general practitioner must remain an essential for every family as a trusted adviser, guide, philosopher and friend, who will make diagnosis and direct the patient to the appropriate specialist. He should be available or provided for every person that makes application. Some 3,000 persons might be allotted to every physician of the general practitioner service. These physicians would carry out their work in and from the clinics, which should be attached to the medical centers of the district. Hospitals should all be linked together to form a single system, so that cases of especial difficulty could be readily transferred from one to another. Each county should have its own general hospital or hospitals staffed by specialists.

In the discussion that followed, Dr. Salter, M.P., said that the British public would not allow itself to be dealt with in any way that a social directorate might decide. There would be an enormous amount of prejudice to overcome before the family physician idea was swept away. The association agreed to a number of resolutions opposing paying wards and charges made at municipal hospitals for infectious disease. It recommended that municipal and hospital treatment should at once be dissociated from the poor law. It also decided to press for the establishment of nursing in the ministry of health and the raising of the income limit applicable to national insurance to $2,500 a year.

The British Medical Association and Outpatients

The council of the British Medical Association recently made a series of recommendations with regard to hospital outpatients —that a large amount of the work undertaken for them at hospitals was unnecessary, that further checks and safeguards were necessary, that the primary object of the outpatient department should be for consultation, and that no person, except in cases of emergency, should be accepted for treatment unless he brings a recommendation from a private practitioner, a provident or other dispensary, a public clinic, or public assistance medical officer. These recommendations were discussed at a meeting of the St. Pancras division of the association, to which members of hospital staffs were invited, so that all sides should be represented. Major R. R. Garratt, secretary of the Royal Free Hospital, said that the demand for hospital treatment came from the patients; hospital authorities could not keep them away. They felt that at the hospital they got a more thorough examination than from private physicians. Therefore the matter rested with the profession a good deal. No hospital wished to have its outpatient department overcrowded with chronic cases, and every effort was made to refer patients back to their physicians, but they could not be forced back. Among the medical speakers there was general agreement with the recommendations of the Council, but Dr. Geoffrey Evans of St. Bartholomew's Hospital insisted on the patient's right. He said that the British Medical Association thought of the physicians first and made a fundamental mistake in not thinking of the public first. If it did, it would strengthen its position. Patients must be allowed their freedom. The recommendation that they should not be seen unless armed with a letter from their physician he regarded as a scandal; it was ethically wrong. If the British Medical Association tried to tie people to their physicians and succeeded, it would collapse. It was not the first object of teaching hospitals to be consulting centers; that was the second object. Their first object was teaching the profession and the study of medicine.

Fatal Explosion During Administration of Anesthetic

An inquest was held on a man of 60 who underwent operation for cancer of the throat at the Birmingham General Hospital. The anesthetic was a mixture of ether and oxygen. The surgeon was using a pencil light, which was receiving electric current from an accumulator. While he was withdrawing the light from the patient's mouth a deafening explosion occurred, sending flames to the ceiling and burning the surgeon. The patient's mouth was wounded and he died. The surgeon stated that he had two previous experiences of similar explosions and that in both the anesthetic was ether and oxygen. The coroner pointed out the lesson, which he regarded as new even to experts, that the mixture was highly explosive. This was all the more important as the mixture was being used more than ever.

One Physician in Five Paid for Automobile Injuries

A great grievance of physicians is that for humanitarian reasons they cannot refuse to attend persons injured in automobile accidents and yet they generally remain unpaid for their services. The loss is especially heavy for physicians who live on main roads where there is much automobile traffic. According to a recent figure furnished by the council of the British Medical Association, payment is made only in one case in five. The council declares that the position is thoroughly unsatisfactory and that the medical profession is being exploited. There does not appear to be any practicable solution. All that the physician can do is to render an account to the patient, leaving him to pay out of his own pocket or by recovery from an insurance company which covers the risk of accidents.

The Institute of Medical Psychology

The Tavistock Square Clinic for Functional Nervous Disorders, of which the honorary director is Dr. Hugh Crichton-Miller, a writer on psychotherapy, has taken the leading place as an institution and medical school for these disorders. At the annual meeting of the supporters of the clinic it was announced that the name would be changed to the Institute of British Psychology, which it was hoped would form in time a great institute of medical psychology in London, comparable in status and work to the London School of Hygiene and Tropical Medicine.

PARIS

(From Our Regular Correspondent)

April 29, 1931.

Vaccination Against Yellow Fever

The question of the prophylaxis of yellow fever is occupying the serious attention of our colonial minister. The epidemic in the region of Dakar, two years ago, cost many lives. The inquiry instituted by Colonial Medical Inspector Lasnet has shown how difficult it is to get practical results from the crusade against the mosquitoes (*Stegomyia*) and brings out the fact that many Negroes who are themselves immune to yellow fever serve as germ carriers and thus help to perpetuate the endemic state of the disease. The efforts toward prophylaxis have thus taken on the form of preventive vaccination. Professor Pettit of the Institut Pasteur was sent on a mission to Senegal and undertook in that area researches of a dangerous nature, which cost the lives of several scientists, among others, Noguchi and Prof. Adrian Stokes of the Rockefeller mission. Professor Pettit, with his co-workers Stefanopoulo and Frasey, prepared, at the same time as Professor Hindle of London (although he did not publish his researches until two weeks after Hindle), a vaccine obtained by treating with formaldehyde an emulsion of highly infected liver pulp in physiologic solution of sodium chloride, according to the method employed in producing the Ramon anatoxins. These vaccines have been shown to be preventive when applied to monkeys (*Macacus rhesus*), which are afterward inoculated with the yellow fever virus. The results are uncertain with the Hindle vaccine; but they are constant with the vaccine of Pettit, who gives two successive injections and then applies his inoculations of the virus after ten, fifteen or thirty days. Furthermore, Pettit prepared vaccines by combining the virus with monkey serum or horse serum, or with dried virulent blood. These vaccines are harmless to man. Unfortunately, the researches of Pettit were interrupted for the lack of monkeys, the sum allowed the mission for their purchase having become exhausted. The new colonial minister has asked the Academy of Medicine to inform him officially what the present status of yellow fever prophylaxis is. A committee composed of Messieurs Roux, L. Bernard, Renault and Pettit formulated its opinion in a report presented by Professor Pettit. The report describes the previous researches of Hindle and himself and recounts the results obtained in Brazil with the inoculations of Aragão, who in Rio de Janeiro alone vaccinated 25,000 persons during the last epidemic with the modified Hindle vaccine (phenol and glycerin). The immunizing effect of the Hindle vaccine varies, being sometimes frank and sometimes nil, in man as well as in the monkey. Aragão is endeavoring at present to discover some method of improving his technic. Nevertheless, it was found that a small number of the persons vaccinated contracted yellow fever. Pettit states in conclusion that it is regrettable that he was not provided the means of continuing his researches, as his vaccine was more effective.

Hopes are entertained that this time his appeal will be heard. Pettit refers also to the good prophylactic results obtained with the serum of convalescent patients, as used by Marchoux and Salimbeni; but its action does not extend beyond twenty-six days, and it is difficult to procure large supplies of the serum. He does not deny the possibility of discovering a chemotherapeutic treatment, such as has been found for syphilis. But thus far no practical results have been secured.

Proposed Changes in Dental Studies

For several weeks, a discussion has been carried on at the Academy of Medicine on the subject of the conditions that should be fulfilled by dental students in order to secure a diploma entitling them to practice dentistry. The question came up at nearly every session, and as the two different points of view have had equally ardent defenders, no definitive conclusion has as yet been reached. The chief point at issue is whether or not, conformably to the proposed law filed by Milan and Rio in the chamber of deputies, the special diploma granted at present to "chirurgiens-dentistes" shall be abolished and the practice of the dental art be restricted to doctors of medicine, as is the case with other medical specialties. The advocates of the limitation of dental practice to physicians, to which group Professor Legueu belongs, bring out that odontology has assumed too important a place in general medicine for the specialty longer to be left in the hands of men who do not possess the necessary preliminary medical training, and assert that dentists today perform operations of a surgical nature for which they are not competent. They demand therefore that the level of their education be raised and that dentists be required to pursue a complete medical course. On the other hand, the opponents of the Milan-Rio proposal object to such a change in requirements. The most serious objection is that a scarcity of dentists would result. Many young persons who have not sufficient means to undertake the long and expensive medical courses required today would decide to give up the idea of becoming a dentist, and many small localities would be deprived of dental care, which would thwart the purpose of the project. On the other hand, not every physician has had sufficient experience that he can practice immediately the dental art, and he will not become competent unless he extends his medical studies in that direction. The general curriculum of the faculty of medicine does not always give medical students sufficient training in dental studies. Furthermore, the faculties of medicine have already more students than they can properly train. Mr. Carnot thinks that the problem can be solved by raising somewhat the standards set at present for the diploma of "chirurgien-dentiste." Mr. Hayem called attention to the fact that the proposed reform has already been realized in Austria, Hungary and Italy. The result has been that the physician-dentists were overrun with clients and had to take technical assistants who were not physicians, who practiced dentistry secretly and contrary to law. He is therefore an advocate of maintaining the present order of things, with a higher standard of medical training for the students who are seeking merely a dental diploma. The academy, being unable to decide between the two ideas, both of which were supported by a goodly proportion of the membership, closed the debate for the time being.

Intragastric Stereoscopic Photography

At a recent session of the Société de médecine de Paris, Mr. Bécart exhibited an apparatus termed a "gastrophotor," with which photographs of the internal surface of the stomach can be taken. This apparatus, which is of about the length and thickness of a Faucher tube, has at the end two small cameras, by means of which eight stereoscopic photographs of the interior of the stomach may be taken by an instantaneous process. Every film being marked in advance, it is possible to know exactly to what part of the stomach it corresponds. An ingenious device enables the operator to avail himself of an instantaneous illumination of 20,000 candle power. The introduction of the apparatus is simple and does not cause the patient any particular inconvenience. The great value of the apparatus is that it permits the early diagnosis of cancer.

BERLIN

(From Our Regular Correspondent)

May 4, 1931.

Action of Liver Diet in Clinical and Experimental Anemias

In a previous letter (THE JOURNAL, Oct. 11, 1930, page 1114), mention was made of Duesberg, who is carrying on researches at the I. Medizinische Universitätsklinik (Charité) and at the Pharmakologisches Universitätsinstitut in Berlin, with reference to his observations on the nature and action of liver diet in clinical and experimental anemias. These important researches have been continued, so that, at a recent meeting of the Berliner Verein für innere Medizin, Duesberg was able to report the new results from the clinicopathologic and Koll from the chemicopharmacologic points of view. Duesberg brought out that with the various methods that are at present available (determination of the number of erythrocytes with "vital granules" [*vitalgranulierte erythrozyten*], determination of the oxygen consumption of the blood, estimation of the urobilin excretion) four different types of anemia can be distinguished clinically and experimentally: (1) aplastic or aregenerative anemia (clinically: cachectic anemias in malignant tumors and chronic infections; experimentally: anemias following repeated venesection); (2) anemia with physiologically accentuated regeneration (clinical and experimental anemias due to venesection); (3) anemia with immoderately accentuated regeneration (clinically: hemolytic icterus; experimentally: anemias that are produced by oxidizing substances [phenylhydrazine, pyrodine and the like]); (4) anemia with disturbed regeneration (clinically: pernicious anemia; experimentally, lead and sulphonal anemia). The anemias with disturbed regeneration are characterized by the fact that, in spite of extensive and richly celled bone marrow, the signs of an accelerated regeneration in the blood stream are not in evidence. In pernicious anemia and in the aforementioned experimental anemias with disturbed regeneration, increased amounts of porphyrin are excreted. The excreted porphyrin is coproporphyrin and uroporphyrin; hence porphyrins that, according to H. Fischer, are not utilizable for the synthesis of physiologically normal hemoglobin.

Attention is called to the histochemical researches of Borst and Königsdorffer, who found a porphyrin content in the megaloblasts not only in the embryonal bone marrow but also in the bone marrow of subjects with pernicious anemia. With reference to the biologic peculiarities of embryonal erythrocytes and of erythrocytes in subjects with pernicious anemia, the following observations are cited: (1) the transfusion experiment of Morawitz; (2) the increased blood metabolism (frequent decline of the hemoglobin and erythrocyte values) at the beginning of liver therapy; (3) the disappearance of the megalocytes shortly after birth. For the genesis of icterus neonatorum the acute degeneration of the embryonal blood still present is made partly responsible. These biologic peculiarities of embryonal erythrocytes and of erythrocytes in subjects with pernicious anemia are due possibly to a different structure of the hemoglobin, evidence for which is furnished by the porphyrin signs in the embryo and in pernicious anemia. Experimentally it proved possible to influence favorably sulphonal and lead anemia by the administration of liver. Likewise, in a subject with an excess of porphyrin, a distinct decrease in the porphyrin excretion was observed following the administration of heavy doses of liver. In pernicious anemia, the excretions of uroporphyrin and coproporphyrin again become normal following the institution of a liver diet. Liver therapy appears to be indicated not only in pernicious anemia and anemias caused by lead but also in the anemias of childhood, which often present morphologic and chemical signs of a return to the embryonal formation of the blood. In aplastic or aregenerative anemias, liver therapy is contraindicated on account of the resulting accelerated metabolism of the blood. The nature of Bartonella anemia makes it unlikely that this aregenerative type of anemia, which is produced by an acute infection, can be influenced by the administration of liver. On the basis of clinical and experimental observations, the assumption appears justified that the liver substance either changes the porphyrins that are not usable for physiologic hematin into available forms or that it inhibits a defective synthesis of the porphyrins or of the hemoglobin.

The investigations of the chemistry of the antianemic principle of liver (W. Koll) took as their point of departure the observation that in animal experimentation (rabbits) the anemia with disturbed regeneration, as produced by sulphonal and lead, can be influenced in the direction of intensive regeneration by means of methemoglobin forming toxins such as phenylhydrazine and toluylendiamine, as well as by liver and liver extracts, and that also the pressed-out juices of liver and extracts prepared from liver, spleen, stomach and gastric juice are producers of methemoglobin. The parallel between an action that stimulates regeneration and the capacity for the formation of methemoglobin was discussed still further and was confirmed by the liver fractions demonstrated by Cohn, Minot, Alles and Salter, and also by a considerable number of liver concentrates on the open market. Attempts to isolate the methemoglobin forming substance have thus far failed, as the substance can with difficulty be reduced to a fractioned concentration, and it is also easily destroyed. To judge from the intensity of the methemoglobin formation in fresh impure liver juices, it ought to be possible to obtain the active daily dose for the treatment of pernicious anemia from very much smaller quantities of liver or gastric mucosa than have been heretofore employed. The relatively small quantities of substance in the clinically active extracts from small quantities of liver or gastric mucosa, which still contain large quantities of admixtures, in comparison with the active quantities of the compound, prepared by Dakin, West and Howes, and the easy destructibility of the active substance in the extracts, lead to the conclusion that the antianemic principle of the liver and the gastric mucosa is not identical with the amino-acid compound suggested by the American investigators. It would seem rather that the active principle must be contained in very minute quantitative substances belonging in size to the category of the hormones, the vitamins and the enzymes.

Annual Session of German Pathologic Society

The Deutsche Pathologische Gesellschaft held its annual session this year in the new pathologic institute of the University of Munich. The president, Professor Hueck of Leipzig, gave the opening address. Friedrich v. Müller, internist, of Munich, stressed the importance of the connection of pathology with internal medicine. Formerly, the physician was both pathologist and physiologist; it was pathology that liberated internal medicine from the ban of natural philosophy. Pathology first became an independent science through Virchow. Whereas the physician sees the disturbed function, the pathologist sees chiefly the changed morphology. That fact necessitated a common field of activity, which has been created in the form of experimental pathologic physiology.

Of the sixty-nine communications presented, the first, which dealt with "The Experimental Growth of Tissues in Relation to Pathology," was divided into two parts, the part dealing with morphology being discussed by Professor Herzog of Giessen and the part dealing with physiology by A. Fischer of Berlin. After a short survey of the history of experimental growing of tissues, Herzog described the growth of individual cells, cell complexes, tissues and organs. The film presentation showed the process of growth, in which one could study the behavior of the fibroblasts, the lymphocytes and the macrophages. Fischer, in turn, brought out that the experimental growing of tissues enabled the investigator to observe and to

study the life cycle of the cells outside the organism. Such isolation makes it possible to clarify, in diseased cells, for instance, the characteristic pathologic processes. Especial interest attached to his statements concerning the isolated experimental growth of pure cultures of various types of cancer, for such observations furnish new points of view for cancer research. It was discovered, in this connection, that cancer cells constitute a short-lived race that, as it dies, excretes substances that promote the growth of both normal cells and cancer cells, which appears to be the explanation for the monstrous autonomic growth of cancer cells in the body. What occasions this short-lived nature of cancer cells, whether changes in the cell itself or a process of selection from the existing types of normal cells, is not yet fully determined. In any event, however, the discovery leads to the seemingly paradoxical conclusion that a lengthening of the life of the cancer cells signifies, to a certain extent, a healing of the cancer. Thus, the study of the physiologic properties of the individual cells may come to have the same scope and significance as was long since accredited to the demonstration and experimental growth of bacteria in the field of pathologic research.

Life Insurance Among German Physicians

Life insurance among physicians dates back more than fifty years, but the life insurance company founded by the physicians and which extends over all of Germany looks back on just fifty years' existence. The company was founded by a number of Berlin physicians because of the observation that many a physician at death left his widow unprovided for. The organization, which bore at first the name "Centralhilfskasse für die Aerzte Deutschlands," had a hard struggle for existence during the earlier years. At the end of fourteen years it counted only 333 members, with total annual premiums amounting to the sum of 28,871 marks ($7,109). An upward trend was observable with the turn of the century. The organization devotes itself now more particularly to group insurance as applied to large leagues of physicians in whole *länder* and provinces. On Dec. 31, 1930, the insurance in force amounted to nearly 245,000,000 marks ($58,310,000), and the annual premiums to 5,500,000 marks ($1,309,000). The surplus last year was more than a million marks. The disability and old age benefits amounted to 296,000 marks ($70,448) and the annuities to widows and orphans to 345,000 marks ($82,110). The cost of administration was only 2.4 per cent, an extremely low figure.

ITALY

(From Our Regular Correspondent)

March 31, 1931.

Heart Disease in Relation to Pregnancy

Prof. Emilio Alfieri, clinical obstetrician at the University of Milan, delivered recently, at the Istituto di cultura medica in Varese, a lecture on cardiac disorders during pregnancy. The subject can be discussed under five principal heads: (1) the influence of pregnancy on the heart under physiologic conditions; (2) the question whether pregnancy in itself is capable of producing cardiac disease; (3) the influence of pregnancy on the diseased heart; (4) the influence of cardiac disorders on pregnancy; (5) the therapeutic indications in cardiac disorders complicating pregnancy. Regarding these complex questions the opinions of clinicians are divided, ranging from the pessimism of Peter, who pronounces the dictum "if the patient is unmarried, she should not marry; if a mother, she must not nurse her child," to the optimism of those who affirm that 93 per cent of cardiopathic women undergo pregnancy without disturbance.

Under physiologic conditions, pregnancy imposes increased work on the heart. Also labor may exert an influence on the heart, raising the blood pressure, while the pulse has a tendency to become accelerated. During the puerperium, however, all the circulatory values gradually return to normal. There is a possibility of cardiac lesions, with functional and anatomic changes, caused by pregnancy. The functional changes are usually slight; but it must be admitted that from pregnancy may result permanent damage of the myocardium with degenerative changes. Pregnancy may cause also the reappearance of preexisting cardiac disorders, associated with so-called gravidocardiac (Peter) symptoms. For the prognosis, which is difficult, it is necessary to make use of modern methods that physiology has placed at the disposal of the clinic for the determination of the myocardiac functioning.

As for the influence of cardiopathies on the functions of maternity and on the product of conception, all authors are agreed that miscarriages are rare as the result of heart disease. Premature births appear to be more frequent; but it may be estimated that more than 50 per cent of the pregnancies in cardiopaths end in births at term. Uterine inertia and hemorrhage are rather frequent. Fetal mortality is high (about 22 per cent), and also infant mortality is high.

The author spoke finally of the therapeutic indications in cardiopathies complicating pregnancy, which, according to Mangiagalli, can be summed up in three fundamental tasks: to prevent compensation from being lost if it exists, to reestablish compensation if it is disturbed, and to interrupt the pregnancy only in case it proves impossible to reestablish cardiac compensation. But Professor Alfieri in recounting his personal statistics emphasized that Mangiagalli's formula is a little too simple and that often there are surprises during the puerperium if one does not intervene in time by interrupting the pregnancy. It is necessary, therefore, to apply an individual clinical criterion.

The Mortality from Puerperal Fever

The Istituto centrale di statistica has published statistics pertaining to the mortality from the principal diseases, as observed in Italy during recent decades. Among the diseases showing a high proportion of case mortality are typhoid, 30.5 per cent, and smallpox and varioloid, 43.4 per cent. But these are surpassed by puerperal fever, which gave a case mortality of 74.1 per cent during the period 1919-1923. From the statistics for the earlier decades it may be observed that the case mortality from puerperal fever for the quinquennium 1888-1892 was 29.9; from 1903-1907, 39.2, and from 1908-1912, 48.2 per cent. It is evident, therefore, that the percentage of mortality observed during the last quinquennium for which the statistics are available (1919-1923) was the highest recorded in recent years, in spite of the fact that puerperal fever has diminished numerically; for 31,397 cases were reported during the period 1888-1893, as against 7,255 during the quinquennium 1919-1923. These observations seem to indicate that this disease is resistant to the aid of the welfare societies; to the prophylactic provisions as provided by law, and to the improvements in living conditions.

Treatment of the Peripheral Algias

At a recent session of the Accademia medica of Turin, Professor Dagliotti discussed a new method of treatment of peripheral algias, which he has studied and experimented with. In order to suppress a pain referred to a given region, it is not necessary to block all the sensory nerve fibers coming from that region; but it is sufficient to reduce the number in accordance with the intensity and duration of the pain and with the range of application of the pain stimulus. After having ascertained, by means of experiments in vitro and on animals, the floating properties of absolute alcohol applied to the spinal fluid and its biologic action when it is injected in small quantities into the subarachnoid space, he employed on man, in cases of pain syndromes of various nature, the spinal injection of absolute alcohol into the intervertebral space nearest to the nerve roots to be attacked. Thirty patients have been subjected to this treatment thus far, one case dating back eight months. In 75 per cent of the cases there developed, after from twelve to eighteen hours, a circumscribed local reaction, with reappearance of acute pains and headache, which lasted from one to eight

days. No motor or functional disturbances were observed. The best results of the treatment were observed in sciatic neuralgia, acute and subacute, that had been rebellious to other forms of treatment. Only mediocre results were secured in funiculitis and radiculitis due to compression. In three cases (diabetic neuritis, funiculitis due to compression, and diffuse tabetic pains) no improvement was secured.

Meeting of Academy of Medical Sciences in Ferrara

The Accademia di scienze mediche e naturali of Ferrara met recently under the chairmanship of Professor Rietti.

Dr. Scardovelli who spoke on the influence of traumas on the development of malignant tumors, recalled the statistics of Schad, who studied in 247 cases the significance of an isolated trauma for the development of cancer. The speaker reported a case of peculiar interest not only because of the rare site (the little finger of the left hand) but also on account of the short period of time between the trauma and the manifestations of the tumor. The exact interpretation of the phenomenon is difficult; but it is probable that disturbances of some of the regulatory systems (endocrine and neurovegetative) facilitate the genesis of blastomas.

Professor Casati explained an automatic sign for determining true left-handedness. A person walking with the arms pendent extends the right arm when the left foot is brought forward, and vice versa. The speaker has observed that in right-handed persons the right arm is extended farther forward than the left, and that in left-handed persons the reverse is true. It is an automatic sign that cannot be simulated.

Dr. Miami recounted his experience with malarial dyspepsia in the nursing child. The speaker, during the researches that he carried out on the acid-base equilibrium in infants, observed that, as a rule, the malarial infant presents a grave dyspeptic condition, which he considers due to the lack of vitamins in the mother's milk. He experimented on a large scale and with success with a treatment consisting in the administration of vitamins combined with ordinary plasmochin. Plasmochin has a high antiplasmodium potency and the vitamins regulate the calcium content of the blood, and the calcium, in turn, regulates the hydrogen ion concentration of the blood and the tissues.

The International Congress of Radiology

At the third international congress of radiology, which will be held in Paris under the chairmanship of A. Beclère, the Italian delegation will be composed of Professors Tandoia, Busi, Bertolotti, Rossi and Balli. The official paper on the third topic, "radiotherapy as applied to inflammatory disorders," will be presented by Prof. Eugenio Milani. The other three topics on the program are: radiologic exploration of the urinary apparatus by means of opaque substances, preoperative and postoperative irradiation of mammary cancer, and diathermic electrotherapy in inflammatory disorders.

Publication of the Works of Spallanzani

A committee of university professors is preparing the material for the publication of the "Complete Works" of Lazzaro Spallanzani, which will contain all the writings, published and unpublished, of the great biologist. It will not be a "critical edition" but will contain material calculated to show what is due to Spallanzani as regards the priority of scientific observations and discoveries. The first two volumes will be issued on the occasion of the International Congress of Physiology, which will be held in Rome in 1932.

The Electrical Knife in Surgery

Professor Cavina, surgeon to the Ospedale di San Giovanni in Florence, has communicated to the Accademia medico-fisica of Florence the results of his experience in a hundred cases in which he operated with the electrical knife. The principal uses of this instrument are represented, according to the speaker, by the treatment of septic processes, the removal of malignant tumors, and operations on the stomach and the intestines. In such cases the use of the electrical knife has made surgical intervention easier and more rapid and has tended to improve also the postoperative prognosis.

The Hygienic Conditions in Rome in 1930

During 1930, the hygienic and sanitary conditions of Rome have been rather favorable. The mortality rate dropped to 11.6 per thousand, as compared with 14.5 per thousand in 1929. Malaria has entirely disappeared from the regions immediately contiguous to the city, but not from the Ager Romanus, in which 366 cases were reported with seventeen deaths. Measles was considerably reduced (206 cases and 39 deaths), as against 6,995 cases and 292 deaths in 1929. There were thirty-seven cases of acute anterior poliomyelitis—all sporadic.

AUSTRALIA

(From Our Regular Correspondent)

April 17, 1931.

The Incidence of Unsuspected Syphilis

Analysis of the results obtained from a serologic study of 3,040 consecutive cases at the two leading women's hospitals in Melbourne showed that 6.4 per cent gave a positive reaction. Of these, 180 women were attending venereal disease clinics, on account of showing signs of symptoms of acute or chronic syphilis, known to be syphilitic and to have had previous treatment, or known to have shown a positive Wassermann reaction elsewhere. Excluding these cases there were 2,860 women without clinical evidence of syphilis and of these 4.1 per cent reacted positively to the test. The distribution of the positive reactors shows that the highest incidence falls in the age group 40 and over.

The Ages of Syphilitic Women

Age	Tested		Positive	
	Number	Per Cent	Number	Per Cent
15–20	428	14.1	27	6.3
21–30	1,458	47.9	89	6.1
31–40	832	27.4	53	6.4
40 and over	322	10.6	27	8.4
	3,040	100.0	196	6.4

An interesting group of cases were those in which a history of abortion was given showing that more than one abortion, especially when accompanied by a macerated fetus, is strong evidence in favor of syphilis.

Incidence of Syphilis in Relation to Obstetric History

Obstetric History	Number Tested	Positive	
		Number	Per Cent
Macerated fetus	22	8++ (7++	36.3
More than one abortion	199	12(3+± (2 ±	6.0
One abortion	238	11(9++ (2+	4.6

These results tend to show that the incidence of syphilis in women throughout the world appears to be fairly uniform. Stillians in America obtained 6 per cent in 6,954 white women and 19 per cent among Negresses.

Carley and Wenger (THE JOURNAL, June 7, 1930) found that 18 per cent of female Negroes were positive.

Boas, Sieke and others in Scandinavia, in a series of 2,000 pregnant women, had 6.7 per cent of positive results.

Previous work in Australia showed that there were 10 per cent positives in 100 consecutive cases in the labor ward in Melbourne in 1913. The work was repeated in 1921 by Fowler and Fairley, and similar results were obtained. The present investigation was carried out by the commonwealth department of health in conjunction with the superintendent of the Women's Hospital and Queen Victoria Hospital in Melbourne, and director of the obstetric research committee.

Marriages

WALTER SCOTT LUCAS, Wynnewood, Pa., to Mrs. Jennie Green Thomson of Ventnor, N. J., April 25.

WILLIAM ALFRED MANN, JR., to Miss Maud Lucille Davison Yeager, both of Wilmette, Ill., May 30.

CLARENCE W. BRUNKOW, Portland, Ore., to Miss Evelyn Madden of Rochester, Minn., April 7.

WESLEY CAMP MCNAMARA, Lincoln, Maine, to Miss Ruth E. A. Peabody of Levant, March 31.

FRANKLYN BABBITT THEIS, New York, to Miss Una Muriel Ficke of Englewood, N. J., June 1.

JOHN H. GIBBON, JR., Philadelphia, to Miss Mary Hopkinson of Boston, March 14.

CARL C. FISCHER to Miss May Adelaide Charles, both of Philadelphia, March 7.

Deaths

Charles Karsner Mills ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1869; Chairman of the Section on Neurology and Medical Jurisprudence, American Medical Association, 1892-1893; professor of diseases of mind and nervous system, Philadelphia Polyclinic, 1883-1898; clinical professor of nervous diseases, Woman's Medical College of Pennsylvania, 1891-1902; professor of mental diseases and medical jurisprudence, 1893-1901; clinical professor of nervous diseases, 1901-1903; professor of neurology, 1903-1915, and since 1915 emeritus professor of neurology at his alma mater and the graduate school of medicine; president, 1886-1887, 1923-1924, and for many years member of the American Neurological Association; member of the Colorado State Medical Society, American Psychiatric Association and the Association for Research in Nervous and Mental Diseases; corresponding member of the Section of Neurology of Royal Society of Medicine of England; on the staffs of the Philadelphia General Hospital and the Philadelphia Hospital for Contagious Diseases; Civil War veteran; author of "A Treatise on the Nervous System and Its Diseases"; aged 85; died, May 28.

John Murphy Withrow ⊕ Cincinnati; Medical College of Ohio, Cincinnati, 1884; assistant professor of gynecology at his alma mater, 1885-1888; dean of the Laura Memorial Woman's Medical College, 1898-1908; professor of gynecology, Miami Medical College, 1905-1912; in 1912 professor of clinical gynecology, and later emeritus professor of gynecology, University of Cincinnati College of Medicine; member of the American College of Surgeons; for many years member and president of the board of education; gynecologist to the Christ Hospital; aged 76; died, in May, of heart disease.

John Daniel Sinkler Davis ⊕ Birmingham, Ala.; University of Georgia Medical Department, Augusta, 1879; past president of the Alabama State Medical Association; professor of surgery, Birmingham Medical College, 1885-1914; for many years professor of surgery at the Post Graduate School of Medicine of the University of Alabama; member of the American College of Surgeons; surgeon to the Hillman Hospital, consulting gynecologist to St. Vincent's Hospital and consulting surgeon to the Baptist Hospital; aged 72; died, May 16, of injuries received in an automobile accident.

Herbert Harold Waite ⊕ Lincoln, Neb.; University of Michigan Medical School, Ann Arbor, 1901; instructor of bacteriology at his alma mater, 1896-1901; assistant professor, 1902-1905, associate professor, 1905-1907, and since 1907 professor of bacteriology and pathology, University of Nebraska; member of the Society of American Bacteriologists; since 1912 in charge of sanitation of the municipal water supply of Lincoln; aged 62; died, April 25, of occlusion of the coronary artery.

Harry Melville Hall ⊕ Wheeling, W. Va.; Medical Department of Western Reserve University, Cleveland, 1898; past president of the West Virginia State Medical Association; councilor at large and past president of the Ohio County Medical Society; member of the American College of Physicians; on the staffs of the Ohio Valley General Hospital and the Wheeling Hospital; since 1921 associate editor of the *West Virginia Medical Journal;* aged 53; died, June 6.

William Edson Boynton, Chicago; Chicago Homeopathic Medical College, 1898; member of the Illinois State Medical Society and the American College of Surgeons; formerly professor of ophthalmology, Hahnemann Medical College and Hospital; on the staffs of the Burnside Hospital and the Illinois Masonic Hospital; aged 58; died, May 25, of chronic nephritis.

Michael Joseph Casserly, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1908; one of the associate coroners of Toronto; served with the Royal Army Medical Corps during the World War; on the outdoor staff of St. Michael's Hospital; aged 48; died, April 3, in St. Joseph's Hospital, of septicemia, following a slight injury to his leg.

Frank Roberts, Marshall, N. C.; Baltimore University School of Medicine, 1895; member of the Medical Society of the State of North Carolina; past president of the Madison County Medical Society; bank president; formerly on the staff of the French Broad Hospital, Asheville; aged 60; died, May 3, of heart disease.

James Alexander Duncan, Toledo, Ohio; University of Michigan Medical School, Ann Arbor, 1871; Bellevue Hospital Medical College, New York, 1872; member of the Ohio State Medical Association; aged 83; died, May 13, of arteriosclerosis and lobar pneumonia.

Byron Walter Parrott, Long Prairie, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1897; member of the Minnesota State Medical Association; served during the World War; aged 61; died, April 2, of pneumonia.

Robert Maitland Ellyson ⊕ Washington, D. C.; Medical Department of Columbian University, Washington, 1888; aged 69; formerly on the staff of the Sibley Hospital, where he died, May 10, of lobar pneumonia and cardiac decompensation.

Martha C. Burritt, Washington, D. C.; Southern Homeopathic Medical College, Baltimore, 1898; formerly associate professor of pediatrics at her alma mater; aged 71; died, April 17, in Richmond, Va., of pulmonary embolus and phlebitis.

Raymond Richard Grasso, Newark, N. J.; University of Vermont College of Medicine, Burlington, 1925; on the staff of the Newark City Hospital; aged 30; died, May 1, in Oteen, N. C., of chronic pulmonary tuberculosis.

George Washington Burnett, Greenville, Ohio; Miami Medical College, Cincinnati, 1881; member of the Ohio State Medical Association; county health officer; aged 80; died, May 8, of carcinoma of the face.

Leon L. Sheddan ⊕ Fayetteville, Tenn.; Medical Department, University of Tennessee, Nashville, 1893; past president of the Tennessee State Medical Association; aged 64; died, April 23, of angina pectoris.

Joshua Edward Benson, Baltimore; University of Maryland School of Medicine, Baltimore, 1884; member of the Medical and Chirurgical Faculty of Maryland; aged 70; died, May 18, of heart disease.

John T. Sugg, Brentwood, Tenn.; Memphis (Tenn.) Hospital Medical College, 1897; aged 70; died, April 29, in St. Thomas Hospital, Nashville, of injuries received when he fell from his automobile.

Charles Borromee Biron, Ste. Sophie De Levrard, Que., Canada; School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval, Montreal, 1899; aged 55; died recently.

Charles L. Van Pelt, Long Island, N. Y.; University of Buffalo School of Medicine, 1878; formerly health commissioner of Toledo, Ohio; aged 78; died, April 25, of chronic valvular disease.

Richard P. Thornton, Republican Grove, Va.; Medical College of Virginia, Richmond, 1884; member of the Medical Society of Virginia; aged 67; died, March 26, of endocarditis and pericarditis.

Joel Melzer Mann, Crowder, Miss.; Memphis (Tenn.) Hospital Medical College, 1911; served during the World War; aged 48; died, May 14, in the U. S. Veterans' Hospital, Johnson City, Tenn.

Orlando Garfield Wood, Hart, Mich.; Medical Department of the University of Illinois, Chicago, 1904; member of the Michigan State Medical Society; aged 51; died, May 5, of pneumonia.

George Washington Chappell, Jr., Warren, Ohio; Howard University School of Medicine, Washington, D. C., 1911; aged 46; died, March 10, in the City Hospital, of cerebral hemorrhage.

Ira A. E. Lyons, Salt Lake City, Utah; Miami Medical College, Cincinnati, 1870; member of the Utah State Medical Association; aged 82; died, March 11, of cerebral hemorrhage.

Peter Gerald Douglass, Halifax, N. S., Canada; Dalhousie University Faculty of Medicine, Halifax, 1925; served during the World War; aged 35; died, March 24, of pneumonia.

Adolph E. Hansing, Belleville, Ill. (licensed, Illinois, 1894); member of the Illinois State Medical Society; aged 76; died, May 9, in St. Elizabeth's Hospital, of cerebral hemorrhage.

John Herbert Reading, Philadelphia; Hahnemann Medical College of Philadelphia, 1878; on the staff of the Hahnemann Hospital; aged 74; died, May 11, of cirrhosis of the liver.

James Madison Rutledge, Syracuse, N. Y.; Syracuse University College of Medicine, 1895; for fourteen years health officer; aged 75; died, May 14, of cerebral hemorrhage.

Samuel Ellsberg ⊕ New York; Medical Department of the University of the City of New York, 1895; aged 59; died, May 20, in the Mount Sinai Hospital, of carcinoma.

Charles W. Ladd, Cannelton, Ind.; University of Louisville (Ky.) School of Medicine, 1882; formerly county coroner; aged 74; died, May 8, of cerebral hemorrhage.

John Nelson Roe, Richmond Hill, N. Y.; College of Physicians and Surgeons, Baltimore, 1889; aged 72; died, May 7, of cerebral hemorrhage and arteriosclerosis.

Louis T. Pim, St. Louis; Missouri Medical College, St. Louis, 1893; formerly chief surgeon of the police department; aged 59; died, in May, of pneumonia.

Frank Eugene Dresser, St. Ignace, Mich.; Hahnemann Medical College and Hospital, Chicago, 1882; aged 80; died, May 7, of influenza and pneumonia.

John Stewart Jamieson, Alexandria, Va.; Kentucky School of Medicine, Louisville, 1891; aged 63; died, May 18, of arteriosclerosis, myocarditis and cystitis.

Charles Davis Smedley, Wayne, Pa.; Hahnemann Medical College and Hospital, Philadelphia, 1885; aged 82; died, April 18, of chronic myocarditis.

Frank H. Braymer, Bradenton, Fla.; University of Maryland School of Medicine, Baltimore, 1886; aged 69; died, April 9, of abdominal carcinoma.

Anna Bessie Taylor Cole, Somerville, Mass.; Boston University School of Medicine, 1884; aged 79; died suddenly, May 10, of cerebral hemorrhage.

John Dixwell, Boston; Harvard University Medical School, Boston, 1873; aged 83; died, April 17, at Milton, of carcinoma of the prostate and stomach.

Jerome Hadden Coe, Syracuse, N. Y.; Bellevue Hospital Medical College, 1879; Civil War veteran; aged 88; died, May 25, of angina pectoris.

Bernard Magoon, New York; Long Island College Hospital, Brooklyn, 1908; aged 52; died, April 12, in the Beth Israel Hospital, of heart disease.

Max Wyler, Fort Lee, N. J.; University of Vermont College of Medicine, Burlington, 1894; aged 66; died suddenly, May 10, of heart disease.

Winford LeRoy Fuller ⊕ Los Angeles; St. Louis University School of Medicine, 1904; aged 51; died, April 12, in Manila, of heart disease.

Arlanden Clay Bridges ⊕ New York; Bellevue Hospital Medical College, New York, 1884; aged 69; died, May 14, of heart disease.

John L. Yolton, Bloomington, Ill.; Missouri Medical College, St. Louis, 1885; aged 72; died, May 2, of coronary thrombosis.

W. Stuart Leech, Roseau, Minn.; Hospital College of Medicine, Louisville, 1890; aged 62; died, April 24, of coronary sclerosis.

Stephen L. Reid, Loretto, Ky.; University of Louisville School of Medicine, 1894; aged 64; died, April 26, of heart disease.

William C. Mendenhall, Trotwood, Ohio; Medical College of Ohio, Cincinnati, 1891; aged 72; died, May 11, of heart disease.

Alfred E. Fletcher, Byesville, Ohio; Columbus Medical College, Cincinnati, 1887; aged 74; died, May 14, of pneumonia.

Levi Butler Hill, Baraboo, Wis.; Medical College of Ohio, Cincinnati, 1879; aged 78; died, April 11, of chronic nephritis.

Charles W. Lepley, Coshocton, Ohio; Columbus Medical College, 1892; aged 83; died, May 9, of bronchopneumonia.

John Allen Anderson, Chicago; Rush Medical College, Chicago, 1898; aged 64; died, May 18, of arteriosclerosis.

Arthur K. Lord, San Francisco; Louisville (Ky.) Medical College, 1905; aged 62; died, April 1, of myocarditis.

Bureau of Investigation

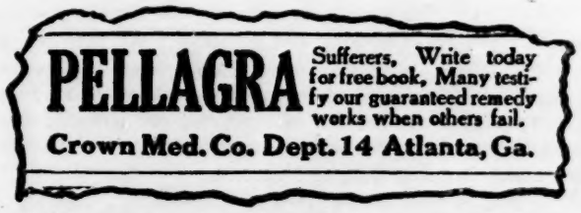
CROWN MEDICINE COMPANY

Thomas Reed's Fraud Debarred from the Mails

The Crown Medicine Company was a mail-order fraud operated from Atlanta, Ga. On the basis of the facts developed by the Solicitor to the Post Office Department, the Hon. Horace J. Donnelly, recently transmitted to the Postmaster General, the latter official issued on May 5, 1931, a fraud order debarring the Crown Medicine Company and its officers and agents, as such, from the use of the United States mails.

According to Solicitor Donnelly's memorandum, the Crown Medicine Company was a trade name used by one Thomas Reed. The business was founded in October, 1919, and for years Reed has sold a preparation called Crown Treatment, representing that when used as directed, the preparation would cure pellagra in a short time, regardless of the duration of the disease. Business was obtained by means of advertisements and circular matter sent through the mails. A specimen advertisement, taken from the *Home Friend Magazine* for January, 1930, is reproduced with this article.

Reed's advertising matter, of course, had the usual number of testimonials in which individuals were quoted as stating that they would have been dead but for the Crown Treatment; that they had had pellagra for years but were now cured, and that they got fine results in two weeks. Reed is said to have informed the postal authorities that the formula for the Crown Treatment he secured about fifteen years ago from a Dr. LaPointe, now deceased, of Tampa, Fla. The American Medical Directory fails to show any Dr. LaPointe as having lived in Tampa, Fla., at that time. Reed further admitted that LaPointe had told him that the treatment was actually nothing more nor less than a treatment for syphilis, the ingredients, according to Reed, being potassium iodide, sarsaparilla extract, essence of pepsin and coloring matter. When the Crown Treatment was analyzed by the federal chemists, however, they found it to be a mixture of potassium iodide and mercuric chloride, with a small amount of iron sulphate and aromatic material.


PELLAGRA
Sufferers, Write today for free book, Many testify our guaranteed remedy works when others fail.
Crown Med. Co. Dept. 14 Atlanta, Ga.

With the instructions for taking the nostrum were directions as to diet, urging the patient to eat a well-balanced diet, to vary it, and describing various food stuffs that should be eaten. Especially did the instructions recommend lean meat, milk, fruits, vegetables, etc.

It was brought out by the government's witnesses, at the time of the hearing, that pellagrins relying solely on the Crown Treatment, instead of "taking no chances" as the advertised claims declared, were in reality exposing themselves to the possibility of most serious, if not fatal, consequences.

Of the physical properties of the Crown Medicine Company, the Solicitor's report states that it consisted of two rooms, one of which was subdivided by a partition into an office and "laboratory"; the other was used for packing purposes. The only equipment of the "laboratory" was a large crockery mixer, resembling an inverted jug, suspended above a table. The Crown Treatment was prepared in this mixer and was then withdrawn into bottles through a spigot at the bottom. Thomas Reed employed in the business his son, Philip S., and his daughter, Betty H., together with his sister-in-law, Nora Newsom.

Thomas Reed was not a physician, chemist or pharmacist. Yet, in spite of this, test correspondence conducted by the government shows that Reed undertook the diagnosis of symptoms and, in some cases, sold his preparation on the basis of symptoms that did not indicate pellagra.

Reed, in answering the charges of the government, declared that he conducted the business for humanitarian purposes. The government brought out the facts, however, that the treatments for which Reed charged $5 cost him but $1. Until recently, Philip S. Reed, the son of Thomas Reed, using the trade name of La Pella Company, was offering for sale, at a lower price, an identical treatment. In fact, the same material as used in the Crown Treatment was obtained from his father. This was offered to persons who failed to respond to the literature distributed by the Crown Medicine Company. The postal authorities called on the La Pella concern to show cause why a fraud order should not be issued against it. As a result, the business was voluntarily abandoned. Thomas Reed, however, did not offer to abandon his fraudulent business, and Solicitor Donnelly recommended the issuance of a fraud order, with the result already given.

Correspondence

"NEUROSINE POISONING"

To the Editor:—The case report of "Neurosine Poisoning" (THE JOURNAL, April 11) clearly illustrates the dangers of misleading labels on proprietary medicines. Presumably the patient had taken 8 ounces of Neurosine in two and one-half days for the relief of pain resembling renal colic. "She lapsed into a deep sleep, which lasted twenty-four hours. She was aroused, two days before her admission, by her physician. Subsequently she was delirious and irrational."

Her behavior after admission to the hospital showed confusion, disorientation, hallucinations and delusions. At first she was noisy and unable to respond to questions. Physical phenomena were not remarkable except for urinary and fecal incontinence. The pupils were normal, and so were the knee jerks. She was discharged ten days after admission, or fifteen and one-half days after taking her first dose of Neurosine.

This case is reported as "Neurosine poisoning," and the discussion clearly indicates that the author considered that the exciting drug was the cannabis, or Indian hemp, which he states is the active principle in Neurosine. If so, the patient received in all 4 9/10 grains (0.3 Gm.) of extract of cannabis. Since the usual dose of extract of cannabis is from ¼ to ½ grain and is repeated several times a day, the 4 9/10 grains represents less than twice a therapeutic dose for two and one-half days.

On page 10 of a pamphlet labeled Neurosine, supplied by the Dios Chemical Company, is given the following:

FORMULA Each fluid ounce represents 40 grains each C. P. Bromides of Potassium, Sodium and Ammonium; 1 grain Bromide of Zinc; 32 grains Extract Lupuli; 40 minims Fluid Extract Cascara Sagrada; .075 grains each extracts Henbane and Belladonna; .60 grains Extract Cannabis Indica; .060 grains Oil Bitter Almonds; 5% Alcohol, with aromatic elixirs.

In reporting the case the author entirely overlooked the fact that his patient received 968 grains of bromides, according to the formula appearing in the pamphlet. The bromides are not mentioned in the label on the bottle from which the author determined the contents. It is evident that a therapeutic dose was exceeded for the bromide contained in the Neurosine.

Bromide intoxication has been emphasized by Otto Wuth (THE JOURNAL, June 25, 1927) and more recently by Harris and Hauser (THE JOURNAL, July 12, 1930, p. 94) and by Wagner and Bunbury (THE JOURNAL, Dec. 6, 1930, p. 1725). The symptomatology is varied, but the case under discussion parallels cases I have observed in which a diagnosis of bromide intoxication was verified by the blood bromide determination.

A recent patient had been taking Neurosine in large quantities for a number of days. On admission he was comatose. The following day he was confused, disoriented, ataxic and semistuporous. Shaking and loud talking did not arouse him, but his response to a cold sponge bath was immediate. Urinary incontinence was present. The spinal fluid was negative except for a pressure of 18 mm. of mercury. His speech remained thick, and he saw buzzards and sharks in his room at times for ten days. Lucid intervals appeared after this time, but periods of confusion recurred until the twentieth day after stopping the Neurosine. The blood bromide on admission was 450 mg. (Wuth method), on the twelfth day 300 mg., twentieth day 150 mg., thirtieth day 25 mg. Recovery was complete after the twenty-first day.

The treatment of the bromide intoxication, once it is established by the blood bromide determination, consists in supportive and eliminative measures. The fluid intake must be maintained, and this occasionally necessitates nasal feeding or subcutaneous or intravenous injections. Sodium chloride, while effective in hastening the elimination of the bromides, must be used judiciously because of the danger of producing delirium and exhaustive states. By replacing the bromine in the tissues, the body fluids are made to contain large amounts of the liberated bromine, and elimination is not rapid enough to prevent toxic effects. In the case mentioned in this report there was enough sodium chloride in the patient's diet to produce a mild confusional state after meals during the later part of his intoxication.

It is my opinion that the case of "Neurosine poisoning" should be classed as a case of bromide confusion or intoxication—a true psychosis due to drugs, and not a case of idiosyncrasy to cannabis. A similar case following prolonged use of Neurosine is reported in part with blood bromide determinations to verify the diagnosis. If the true contents of Neurosine had been printed on the label, the case previously reported would have had a different and probably better interpretation.

GEORGE T. HARDING III, M.D., Columbus, Ohio.

PREVENTION OF CANCER

To the Editor:—Apparently the greatest protection from cancer of the cervix rests on annual or semiannual pelvic examinations between the birth of children and after the birth of the last child. The assumption rests on the pretty generally accepted theory that cancer begins in a local spot in preexisting cells, whether of embryonic origin or not, and that the first lesion, consisting of abnormal cells, is not malignant. The cause of the change in the local spot from normal to abnormal cells is chronic irritation or injury of some type. There may be a tendency to such changes through heredity. Over this factor as yet we have no control. The evidence that cancer never begins as cancer but is first something that is not cancer is pretty clear in observations of cancer of the skin and of the mouth.

The majority of cancer students agree that cancer of the cervix most frequently occurs in women who have borne children, and among these women with cancer of the cervix, in the vast majority there is no history of proper examinations after the birth of children, of adequate repair of injuries, or of proper treatment for infections.

There is another factor on which all agree: In spite of the educational campaign in the past eighteen years, with evidence of great improvement in the results of treatment of cancer in its localizations, such as in the mouth, on the skin, or in the breast, there is distinctly less improvement in cancer of the cervix though radium is accessible and constantly in use.

Some six months ago I was given a certain amount of money to make an investigation of how better to protect women from cancer. In view of these facts, I chose cancer of the cervix. I have written to 941 obstetricians and gynecologists throughout the country and to many more women and their physicians.

There is a general agreement among physicians as to the great value of annual or semiannual pelvic examinations for the protection of mothers against cancer of the cervix. The difficult question to solve is how to influence women to have these examinations made and, when they are made, to have them well done, so that they will receive the greatest protection.

On account of this investigation, there is going on now an unusual movement to bring this correct information to as many women as possible through organizations of women, both national and state. The object of this is to get mothers into such a state of mind that they will demand these examinations.

In the Surgical Pathological Laboratory of the Johns Hopkins University and Hospital, we have been accumulating for years a tremendous amount of evidence on every surgical disease and, through a general follow-up system, we know the actual cause of death in the majority of patients whose records we have, irrespective of the disease for which they received treatment. Cancer of the cervix is not an uncommon cause of death among the women who have borne children and who have been treated in this clinic for lesions other than pelvic. So far we have been unable to find any evidence that these women who died later of cancer of the cervix had ever been informed of the protective value of annual or semiannual pelvic examinations, or that they had ever been given the benefit of such examinations.

The distribution of this information has already had a tremendous influence on the routine procedure of the clinic. Every patient who has borne children is questioned concerning her last pelvic examination. In the great majority the history of such an examination is conspicuous by its absence, unless the patient had had definite warnings. When we advise such an examination, we have no difficulty whatever in getting it done and properly done.

The first and chief object of this communication is to bring to the attention of every practicing physician that it is his duty and responsibility to suggest to every mother who comes under observation the importance of a pelvic examination and to see that it is made. This responsibility is just as urgent as that of advising parents to have their children protected from diphtheria and to see that it is done. Both of these protective and preventive measures are greatly neglected.

I am greatly impressed with the results of the investigation so far. There must be two great movements. In one the object is to influence women who have borne children to demand of their physician a proper pelvic examination. The other is to get more and more physicians to advise it as a routine to all mothers who come in any way under their attention.

We have the evidence that cancer of the skin and mucous membrane of the mouth is a preventable disease, and women are proving it. No beautiful woman gets cancer of the skin on her face, because she gives immediate attention to the first appearance of any blemish. The modern woman is teaching men how to smoke without increasing the risks of cancer of the mucous membrane. The woman today who smokes keeps her teeth clean and smooth; she stops smoking the moment she feels a sore spot or sees a white patch.

There is every evidence that cancer of the cervix is as preventable a disease as cancer of the mouth or skin. However, the first lesion which appears on the skin or in the mouth and which is not yet cancer is recognized practically at once. But in the cervix a benign lesion may be present for years without discharge or discomfort, and both discharge and discomfort may not appear until cancer has developed and infiltrated beyond the hope of a cure by surgery or irradiation. To tell people to report the moment they observe a spot on the skin or in the mouth, whether it is painful or not, is sufficient to protect them against cancer; but to tell women to report the moment they observe anything unusual in the monthly period or its reappearance after the menopause is not sufficient protection.

There seems to be a universal agreement among those members of the medical profession most familiar with cancer of the cervix that the greatest protection and the ultimate greatest reduction in the mortality rests on annual or semiannual pelvic examinations.

JOSEPH COLT BLOODGOOD, M.D., Baltimore.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MEDICAL HAZARDS IN OPERATION OF MOTION PICTURE PROJECTOR

To the Editor:—I have just seen a man, aged 28, who operates a motion picture machine. He complained of cardiac palpitation, occasional stifling sensations, slight precordial pain, and numbness of the left arm. His blood pressure is normal; there are no cardiac murmurs, friction sounds, or irregularities in the heart rate or rhythm. His chest is clear. The urine shows a faint trace of albumin and an occasional hyaline cast. The reaction is natural. He works in a small operating booth, and occasionally when the film catches fire he inhales some of the fumes. There is always some odor from the films. He says that when a new film package is opened there is always a rather strong gas liberated and that this gas is inflammable. Having in mind the Cleveland Clinic disaster, I thought that the man might be suffering a low grade poisoning from the film fumes. Can you give me any light on this question? Have there been any similar cases reported? Please omit name.

M.D., North Carolina.

ANSWER.—The work of the operator for motion picture projectors may be attended by a number of undesirable conditions. Foremost in this list is the hazard of nitrogen oxide fumes from the burning of cellulose nitrate films. The chemistry of motion picture films is ably discussed by G. E. Matthews (Chemicals in the Movies, *Chemical Markets* **25**:365 [Oct.] 1929). Exposure to apparently trivial concentrations may lead to profound edema of the respiratory tract. Because of fine machinery in projection rooms, carbon tetrachloride is a widely used fire repellent. Most other fire extinguishing materials damage metals. Carbon tetrachloride fumes may lead to inflammation of the respiratory tract, to pneumonia, to narcosis and, if the exposure is prolonged, to degeneration of the liver, along with nephritis. Of commoner occurrence, but less direct in the production of physical impairment, are:

1. Damage to the eyes from the intense glare from light reflected from the surface of the motion picture film; at times, also, direct exposure to intense lights.
2. Excessive temperatures.
3. Frequently, but not always, continuous poor ventilation, even in theaters in which ventilating systems are installed.
4. Since one carbon in an arc burns more rapidly than the other, some carbons may be jacketed with metals to equalize the period of use. Lead has been detected as an impurity in such metals. Lead poisoning from inhaled fumes is theoretically possible.

Odors are not prime causes of disease states, but by producing nausea and lessening the depth of breathing, they favor ill health. Without ascribing the symptoms and signs mentioned in the query to any one chemical or condition, it is believable that the general work of the motion picture operator is conducive to deviations from normal states.

USE OF SALINIZED WATER IN INDUSTRY

To the Editor:—Attached hereto is a copy of an advertisement by the Fairway Laboratories, Inc., Belleville, Ill., in the March issue of the *National Safety News*, relative to the treatment of mill cramps and muscular fatigue by the use of sodium chloride tablets. I would be glad to have an expression of your opinion regarding the efficacy of this treatment as compared with dextrose. The address of the publishers of the *National Safety News* is 20 North Wacker Drive, Chicago.

E. M. PARLETT, M.D., San Francisco.

ANSWER.—At the present time salines are regarded as preferable to dextrose in the prevention and treatment of factory cramps. It is probable that several varieties of cramps, as to cause, exist. The commoner varieties are attributable to undue loss of fluids and salines from the patient. Another type may result from the retention of waste products within the body, leading to a mild intoxication. It is also highly probable that these two causes of cramps may coexist. In cases due to toxic substances within the body, dextrose is efficacious.

Arduous industrial work, particularly in high temperatures and low humidity, may lead to so extensive a loss of fluids and salines as to be harmful. It is not unusual for workers to excrete as much as 15 pounds of water a day. Approximately 2 per cent of this perspiration consists of solids, including chlorides. From loss of salts by oversweating, water intake in abundance leads to attacks of cramps, because of marked varia-

tion in the diffusion pressure. The more prolonged the sweating, the greater the amounts of chlorides in the sweat. Intake of water during periods of sweating promotes further sweating and loss of minerals. Replacement of chlorides in drinking water is therefore desirable. Both prevention and treatment of cramps are well abetted by the intake of dilute saline solution to compensate for loss through sweating. It is, however, undesirable that tablets of salts be taken into the body as such. Local action of concentrated salt solution is not desirable. It is better that the entire water supply be treated with salt to the extent of 1 per cent. Under many conditions in factories, it is desirable that two sources of water supply be provided—one with salt and one without, as some workers may feel that their duties are not sufficiently taxing to call for the drinking of salted water. A strength from 0.3 to 0.5 per cent, being more palatable, may lead to more extensive use. Salinized water is more palatable if well chilled in the range of temperature from 47 to 52 F.

NAUSEA OF OIL WELL WORKERS

To the Editor:—May I ask for information concerning nausea of oil well workers? Could you supply me with references to literature on the subject? P. F. HASKELL, M.D., Atresia, Calif.

ANSWER.—No known publications primarily deal with nausea as found in the petroleum industry. The most likely sources of information, at this time, are:

1. The Bureau of Industrial Alcohol, Washington, D. C., under the direction of Dr. Doran. Recent investigations concerned with suitable denaturing agents for ethyl alcohol have embraced petroleum derivatives and fractions. Alcotate, a much used denaturant, is derived from crude oils in certain areas and is a producer of nausea, among other reactions.

2. The Bureau of Mines, Washington, D. C., the medical division of which is under Dr. R. R. Sayers, has conducted numerous investigations with reference to the action of petroleum derivatives.

Sulphur compounds are the probable sources of nausea, although any petroleum oil may lead to nausea in some workmen as the result of offensive odors. Odors in themselves are not causes of disease, except that nausea may lead to insufficient intake of food, resulting in faulty nutrition, and breathing may become so shallow on account of offensive odors as to eventuate in insufficient oxygenation of the tissues.

SWELLING OF HANDS

To the Editor:—What conditions cause swelling of the hands with considerable cyanosis? Other conditions found are negative. What are the therapeutic measures if any? M.D., Illinois.

ANSWER.—If it may be assumed that the swelling of the hands is symmetrical, there are few if any organic diseases that could produce this picture without definite conditions pointing to the origin. The most probable condition is acrocyanosis, a functional disturbance of circulation involving the venules and consisting of a dilatation of these vessels which results in stasis. Clinically the hands show a reddish blue, sometimes violaceous, coloration, with some puffy swelling but never edema; they are cold, but the patient is not always conscious of this. It occurs usually in females but may occur in adolescent males. It is associated with disturbances of the sympathetic nervous system, commonly in effort syndrome, and is a vasomotor neurosis. It is also found with some of the endocrine diseases, occasionally with mild types of hypothyroidism and ovarian disorders. It may follow severe acute infections but is then usually transient, and sometimes is associated with chronic arthritis.

Treatment is entirely dependent on removal of the cause.

MICROSCOPIC EXAMINATION OF REMOVED TISSUES

To the Editor:—Of what value is a microscopic examination of a removed appendix and why does the College of Surgeons require that examination in the standard hospitals?

HERBERT R. TOOMBS, M.D., Westfield, Mass.

ANSWER.—The microscopic examination of appendixes frequently is of value in establishing the structural changes more accurately than can be determined by mere naked eye examination. Occasionally an unsuspected early stage of acute appendicitis is discovered or an unsuspected so-called carcinoid tumor of the appendix revealed. All pathologists who examine the appedix in a routine manner are familiar with the frequent discrepancies between the clinical and the microscopic diagnosis of lesions of the appendix. The American College of Surgeons requires microscopic examinations of the appendix, uterine curettements and the like in order to set up controls that will tend to eliminate unnecessary surgical operations and to secure facts that are essential in order to complete clinical records.

USE OF OVARIAN PREPARATIONS IN ARTIFICIAL MENOPAUSE

To the Editor:—In THE JOURNAL, March 14, there is an inquiry from Dr. Renner about the treatment of the symptoms of artificial menopause. In your reply you make no mention of the new preparations of ovarian extracts. I wonder whether this is an oversight or whether you do not believe they are of value. I have so regularly been able to ameliorate these symptoms by the continued use of ovarian preparations given hypodermically by the patients themselves that I hesitate to let your answer go without comment.

MILTON BENJAMIN ROSENBLÜTH, M.D. New York.

ANSWER.—It is the consensus among the leaders of gynecologic thought in America, including the department chiefs of most of our large medical schools, that available ovarian preparations are of little therapeutic value. This includes hypodermic preparations as well as others. There is, however, much optimism regarding future developments in this field. The brilliant work of Corner, of Collip, of Allen and Doisy, and of Frank promises to yield much of practical value in this field of therapy in the not far distant future.

KLINE TEST FOR SYPHILIS

To the Editor:—Is the Kline test as put out by the LaMotte Chemical Products Company considered as reliable as the Wassermann or the Kahn test? I do practically all of my own laboratory work but may have possibly only one or two tests a week to make for syphilis. Would this amount of tests keep a man in practice so that his reports would be reliable? C. KIRKE RUSSELL, M.D., Falfurrias, Texas.

ANSWER.—There are many flocculation tests for syphilis, all more or less efficient. The Kline test is less popular than the Kahn, which at the League of Nations Health Committee Conference in 1929 was given a very high rating (THE JOURNAL, Aug. 3, 1929, p. 351). All serologic tests for syphilis have a margin of error, and it seems to be the general opinion of American syphilologists that the combination of the Kahn and the Kolmer-Wassermann is the most reliable. It is recommended that extra tests be made each week, on known syphilitic and nonsyphilitic persons if possible, in order to keep the work under control. The chief difficulty in the Kahn technic is in reading the test.

DESENSITIZATION IN HAY-FEVER

To the Editor:—Last year a woman, aged 48, came to me with a history of seven or eight years of severe autumnal hay-fever. I made the intradermal tests and found her sensitive to ragweed, giant and small. A full series of desensitizing injections successfully prevented the usual attack, which had always started on or about August 15. The problem is: Will she be protected for this year or will she have to have the injections again? Please use initials only. M.D., Long Island City, N. Y.

ANSWER.—The treatment should be continued for at least another season as patients rarely lose their sensitiveness to pollens after one season's treatment.

USE OF COPPER SULPHATE IN SWIMMING POOL

To the Editor:—Is there any health hazard in putting copper sulphate in a swimming pool for the purpose of destroying algae, this pool to be used exclusively by children? Would there be any harmful results derived from using this water for irrigation purposes? Do you know of any better way of destroying algae in swimming pools? I am enclosing a self-addressed, stamped envelop for your use, if I may be favored with your reply by letter. Otherwise, may I request that you publish your answer in the next issue of THE JOURNAL? If published, please omit name. M.D., California.

ANSWER.—The use of copper sulphate in a swimming pool for the purpose of destroying algae does not constitute a health hazard. Copper sulphate has a relatively low toxicity for animals. It is sometimes used as an emetic but is not generally recommended for this purpose except in cases of phosphorus poisoning. The emetic dose is 0.25 Gm. (4 grains). The usual dose of copper sulphate for swimming pool purification is about one part per million parts of water. An emetic dose would therefore be contained in 250 liters (approximately 275 quarts) provided all the copper remained in solution. Sollmann states

that when chlorophyll-copper compounds are given, even over long periods, in such amounts that the daily consumption of copper is from 12 to 15 mg. there are no harmful effects produced. However, it is believed that these quantities, if ingested as copper sulphate and over a long period, might produce some pathologic changes. In order to obtain this amount of copper as copper sulphate from a swimming pool, it would be necessary to swallow not less than 3 gallons daily. It is not necessary to dose a swimming pool continuously with copper sulphate. Furthermore, the copper does not remain in solution but is removed in the form of a precipitate provided the water is not allowed to become acid.

It is difficult to conceive of any harmful results from the use of this water for purposes of irrigation.

The best way of destroying algae in swimming pools is by the use of copper sulphate. In fact, there is no other way that has proved both efficient and practical.

INHALATOR FOR GAS POISONING

To the Editor:—What apparatus is best to use in carbon monoxide (natural gas) poisoning? Our city department is considering a LaFrance inhalator, carbon dioxide 7 per cent and oxygen 93 per cent, machine. Is this as good as the lung motor?

L. J. RUTLEDGE, M.D., McComb, Miss.

ANSWER.—The treatment of gas poisoning by inhalation of carbon dioxide and oxygen was developed and introduced by Drs. Henderson and Haggard. The apparatus recommended by them for this treatment is the H-H Inhalator. It is manufactured by the Mine Safety Appliances Company, Braddock Avenue and Thomas Boulevard, Pittsburgh. Authorities recognize that carbon dioxide 7 per cent and oxygen 93 per cent is the best mixture of gases for this inhalational treatment.

INADVISABILITY OF MIXING OTHER DRUGS WITH ARSPHENAMINE

To the Editor:—Is it all right to mix and give mercurosal and neoarsphenamine at the same time?

PATRICK H. SMITH, M.D., Babylon, L. I.

ANSWER.—No data are available on the intravenous administration of mercurosal and neoarsphenamine in the same syringe. Considerable was written along this line some years ago, mostly by European authors, but one hears little of it now. After all, why risk any possible danger from chemical interaction of the drugs when it is so easy and safe to give the mercurial intramuscularly?

RADIUM OWNED BY HOSPITALS AND PHYSICIANS

To the Editor:—How many hospitals in the United States own radium of the value of $5,000 or over? How many medical men in the United States own radium of the value of $5,000 or over? What percentage of medical men are expert in the use of radium?

BOYD WILLIAMS, M.D., Minneapolis.

ANSWER.—According to figures supplied by the American Society for the Control of Cancer, which are recognized to be only relatively complete, the total amount of radium owned in quantities of 75 mg. and over in the United States is 85,228 mg. The hospitals owning 75 mg. and over number 135. The 135 hospitals own 68,033 mg. The individuals owning 75 mg. and over total forty-seven, with a total of 6,945 mg.

It is impossible to say how many physicians are expert in the use of radium, since this is a relative matter.

PURPLE IN THE HAINES TEST

To the Editor:—What is the significance of the development of a bright purple in making a Haines sugar test in the urine? In three cases lately this has occurred with Haines's solution which had been freshly made up and reacted normally in all other tests. One of the patients was diabetic and had exceptionally high blood pressure together with impending uremia. The other two cases were in children each with acute appendicitis, the reaction being noted preoperatively and subsiding several days after each operation.

C. W. HENNEY, M.D., Portage, Wis.

ANSWER.—The development of a bright purple in Haines's solution on the addition of urine is the result of the reaction between a urea derivative and copper sulphate in the Haines solution. It is similar to the biuret reaction, is not infrequent and is without especial significance.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALABAMA: Montgomery, July 14-17. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Denver, July 23. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

CALIFORNIA: San Francisco, July 6-9. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, July 8-10. Sec., Dr. Wm. W. Williams, 224 State Capitol Bldg., Denver.

CONNECTICUT: *Regular* (written and endorsement, respectively), Hartford, July 14-15 and July 28. Sec., Dr. Thomas P. Murdock, 147 West Main St., Meriden. *Homeopathic.* New Haven, July 14. Sec., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: *Basic Science.* Washington, June 29-30. *Regular.* Washington, July 13-14. Sec., Dr. W. C. Fowler, District Bldg., Washington.

ILLINOIS: Chicago, June 23-25. Supt., Mr. Paul B. Johnson, Springfield.

INDIANA: Indianapolis, June 23-25. Sec., Dr. Wm. R. Davidson, 413 State House, Indianapolis.

MAINE: Augusta, July 7-8. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, July 14-16. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: Class A Medical Schools having five or more applicants, June 23-25. Ex. Sec., Mr. E. S. Elwood, 225 South Fifteenth St., Philadelphia, Pa.

NEW YORK: Albany, Buffalo, New York, Syracuse, June 22-25. Chief, Mr. H. J. Hamilton, Room 315, State Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, July 7-10. Sec., Dr. G. M. Williamson, Grand Forks.

OREGON: Portland, July 7-9. Sec., Dr. C. J. McCusker, 1014 Medical Dental Bldg., Portland.

PENNSYLVANIA: *Written.* Philadelphia and Pittsburgh, July 7-9. *Practical.* Philadelphia, July 10-11. Sec., Dr. Charles D. Koch, Harrisburg.

RHODE ISLAND: Providence, July 2-3. Director, Mr. Lester A. Round, Room 319, State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, June 23. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

SOUTH DAKOTA: Custer, July 21. Dir., Dr. H. R. Kenaston, Bonesteel.

TEXAS: Austin, June 23-25. Sec., Dr. T. J. Crowe, 918-919 Mercantile Bank Bldg., Dallas.

UTAH: Salt Lake City, June 30–July 1. Director, Mr. S. W. Golding, 412 State Capitol Bldg., Salt Lake City.

VIRGINIA: Richmond, June 23-26. Sec., Dr. J. W. Preston, 720 Shenandoah Life Bldg., Roanoke.

WASHINGTON: *Basic Science.* Seattle, July 9-10. *Regular.* July 13-14. Dir., Mr. Charles Maybury, Olympia.

WEST VIRGINIA: Harpers Ferry, July 7-9. Sec., Dr. W. T. Henshaw, Charleston.

WISCONSIN: Milwaukee, June 30-July 2. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., LaCrosse.

Alabama January Examination

Dr. J. N. Baker, secretary, Alabama State Board of Medical Examiners, reports the written examination held at Montgomery, Jan. 13-16, 1931. The report covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Seven candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Rush Medical College	(1930) 89, 90.3,	(1931)	90.5
Northwestern University Medical School	(1930)* 86,		87.6
Tulane University of Louisiana School of Medicine	(1930)		87.5
Jefferson Medical College of Philadelphia	(1930)		84.8

* These candidates have received their M.B. degree, and will receive their M.D. degree on completion of one year's internship in a hospital.

New Hampshire March Examination

Dr. Charles Duncan, secretary, New Hampshire Board of Registration in Medicine, reports the written and practical examination held at Concord, March 12-13, 1931. The examination covered 12 subjects and included 100 questions. An average of 75 per cent was required to pass. Two candidates were examined, both of whom passed. Eleven candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Queen's University Faculty of Medicine	(1927)		89.9
University of Montreal Faculty of Medicine	(1930)		76.2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Bowdoin Medical School	(1915)		Maine
Boston University School of Medicine	(1930)		Mass.
Harvard University Medical School	(1897),	(1928)	Mass.
Tufts College Medical School	(1925)	Massachusetts, (1929)	Vermont
New York Homeopathic Med. Coll. and Flower Hosp.	(1921)		New York
University of Vermont College of Medicine	(1929)		Vermont
McGill University Faculty of Medicine	(1925)		Maine

(1928) Vermont, (1928) New York

Book Notices

SILICOSIS: RECORDS OF THE INTERNATIONAL CONFERENCE HELD AT JOHANNESBURG 13-27 AUGUST 1930. International Labour Office, Studies and Reports, Series F (Industrial Hygiene) No. 13. Paper. Price, $4. Pp. 692, with illustrations. Geneva: International Labour Office (League of Nations). Boston: World Peace Foundation, 1930.

This is a report of the International Conference on Silicosis held at Johannesburg, South Africa, last year, the first conference convened by the International Labour Office of the League of Nations to meet outside Europe. Johannesburg was selected for the conference because of the presence of one of the most unique collections of material on the subject of silicosis and because there some of the most important research and practical work on the prevention of silicosis has been done. The International Labour Organization, which represents fifty-five governments of the world, in an agreement to collaborate to improve the conditions of labor began at the same time as the League of Nations. The International Labour Office is the secretariat of the International Labour Organization. To the annual International Labour Conference each of the fifty-five member states sends a delegate and this body of delegates alone formulates decisions which later may become international treaties. This conference at Johannesburg was not of that nature but was for the purpose of securing the fullest possible information, which will later be placed before the International Labour Conference for consideration. There was perhaps no better place to convene to secure information on silicosis than in South Africa. The government of South Africa definitely recognized miners' phthisis as an occupational disease in 1911 and since then no fewer than nine acts of parliament have been passed dealing with matters of compensation to miners who have silicosis or to the dependants of deceased miners. Statistics on silicosis have been available only since 1911 in South Africa, and since then about £15,000,000 has been paid out for compensation claims, rising mostly from an average of 21,000 to 30,000 white people employed under ground. These figures give an idea of the ramification of the disease, of the suffering of victims, and of the loss to the industry. The program of this conference dealt with the cause and prevention of silicosis, the medical aspect of silicosis, with the incidence and legal aspect of the disease, and with questions of compensation. The delegates of the United States were Drs. L. V. Gardner, Trudeau Sanatorium, N. Y., and Albert E. Russell of the U. S. Public Health Service. Among those who gave addresses were Mavrogordato, McEwen, Bianchi, Bohme, Strachan, Gardner and Russell. The studies and reports presented make up this volume. In adopting the report on prognosis, after-care and compensation, the conference held that an initial physical examination should be given every employee in order to insure a certain standard of physique and that periodic medical examinations of miners is essential. There is no evidence that race is a factor in the prognosis or that age plays an important part. The evidence at least in South Africa shows that the disease progresses downward in most cases and is not arrested even though the victims leave the mining industry. The conference believes, however, that the continuation of the victim of silicosis in underground employment aggravates the progress of the disease, except in some selected mining occupations. The prognosis is always worse when tuberculosis supervenes at the outset of silicosis, and is worse than in a case of tuberculosis alone and in younger than in older subjects. Silicosis is an occupational disease which involves the reduction of working capacity, and the determination of the amount of disability should be entrusted to an independent body of experts possessed of clinical and technical knowledge. In all cases of open tuberculosis the employee should be removed from any industrial occupations involving exposure to dust. However, where legislation provides for compulsory removal, it should not necessarily be applied to workers who have been in the same industry for not less than fifteen years and who have reached the age of 45. The conference met thirteen times. Inquiries concerning this publication and others of the National Labour Office may be addressed to Mr. L. Magnusson, Jackson Place, Washington, D. C., or to the office in Geneva, Switzerland.

FUNCTIONAL DISORDERS OF THE GASTRO-INTESTINAL TRACT. By William Gerry Morgan, M.D., F.A.C.P., Professor of Gastro-enterology, Georgetown University Medical School. Everyday Practice Series. Edited by Harlow Brooks, M.D. Leather. Price, $5. Pp. 259, with 32 illustrations. Philadelphia: J. B. Lippincott Company, 1931.

A new series of volumes, entitled "Everyday Practice Series," is being issued by the Lippincott Company under the editorship of Dr. Harlow Brooks. The volumes are bound magnificently in a facsimile of the noted "Summa Magistri" by Johannis de Santeo Geminiano. It is fitting that among the first of this series to appear should be the volume by Dr. William Gerry Morgan, President of the American Medical Association.

Gastro-intestinal disturbances represent a large part of the practice of every physician. Many of these patients are ambulatory, and the conditions from which they suffer do not incapacitate them at first but may lead to serious disorders. Dr. Morgan had in mind the preparation of a treatise which would help the general practitioner in the diagnosis and treatment of functional diseases of the alimentary tract. In the preparation of the book he has drawn largely on his own practice, which is extensive, and on a personal experience, which has been successful.

The book opens with a discussion of the physiology of the alimentary tract with particular relationship to the nerve supply and the reflex phenomena. The outline of the examination of the patient covers all the important points in the history as well as in the physical examination. It should be recognized that in such cases at least 80 per cent of importance can be assigned to the history and physical examination, if properly made, and the remaining 20 per cent of emphasis can be placed on the laboratory and radiologic investigations.

The remainder of the book is divided into a consideration of the special conditions affecting the stomach, including particularly the neuroses associated with cardiospasm and pylorospasm. These sections are illustrated with reports of cases and excellent roentgenograms. There is a discussion of atony, nervous vomiting, hyperchlorhydria, achylia gastrica, acute and chronic gastritis, and disorders of the hunger sense and of the appetite. The same sections discuss the various disturbances of the intestinal tract.

Dr. Morgan is evidently not greatly impressed by the recent work of Bargen on colitis, since there is apparently no reference to this work in the text. The concluding sections of the book concern constipation, flatulence, halitosis and visceroptosis. The book is marked throughout by simplicity and sanity, which make it especially adaptable for the practitioner for whom it is meant.

SCALPEL, SWORD AND STRETCHER: FORTY YEARS OF WORK AND PLAY. By Colonel Robert J. Blackham, C.B., C.M.G., M.D., Knight of Grace of the Order of St. John. Cloth. Price, 12/6. Pp. 340, with 16 illustrations. London: Sampson Low, Marston & Co., Ltd., [n. d.].

These are the reminiscences of a doctor who served many years as a medical officer in the British army. He served in various distant parts of the world and seems to enjoy living again in story his service. He recalls his medical training as an apprentice to the old style doctors of Ireland, where he was forbidden by his preceptor to leave the house in the evening, so as to avoid the night life in the little Irish town. Suffering under this "confinement to barracks," he left him and found a new chief, "a real M.D. this time." He relates many amusing incidents that occurred among the peasants. His preceptor one day said to a husband: "Mickey, I told you your wife was bad and should go to the hospital. Now she is much worse and you send for me again after refusing my advice." "Well, doctor darlin'," the peasant said, "will ye take her in the hospital now?" The preceptor replied: "When I saw her last she was fit to be moved, but in her present state you must move her on your own responsibility." "Ah, doctor jewel," the peasant said, "and where would I be getting that, shure yer Honour knows it's only the wee ass and cart I've got!" Dr. Blackham's life was indeed busy, yet he found time to study law and to be admitted to the bar. He was awarded various orders and honors, before retiring from the army. In closing, he points out the opportunities for medical work that come to medical officers. He admits that the most alluring proposition the government has to induce men to enter the army medical corps is the prospect of a living salary after retirement or on becoming disabled. He

feels that the British War Office has broken faith with the older army doctors. On retirement, he found £733 inadequate, yet he had to expect to have his pension reduced every five years. The army doctor retires at a disadvantage. He has been out of civil life and perhaps out of the country for years, and that unfits him for entering into competition with civilian physicians in private practice. Hence a retired officer must get something to do or live abroad, where the cost is less, or live in a remote village. This book will interest any one who has been in the services, as well as those who look forward to a commission in the army medical corps.

MILK AND MILK PRODUCTS PREPARED FOR THE USE OF AGRICULTURAL COLLEGE STUDENTS. By Clarence Henry Eckles, D.Sc., Chief, Division of Dairy Husbandry, University of Minnesota, Willes Barnes Combs, M.A., Professor of Dairy Husbandry, University of Minnesota, and Harold Macy, Ph.D., Associate Professor of Dairy Bacteriology, University of Minnesota. Cloth. Price, $3.50. Pp. 379, with 92 illustrations. New York: McGraw-Hill Book Company, Inc., 1929.

This textbook of college grade dwells rather intensively on the composition and properties of milk and the factors that influence these characteristics, and less intensively on the microbiology of milk and the bearing these fundamental factors have on the various milk products and the processes involved in their manufacture. It is of special interest to students of practical and commercial dairying and to the manufacturer of dairy products. Emphasis is placed on the sanitary production of milk and the value of dairy products in the human diet. The common dairy processes for the production of wholesome market milk, the problems of its distribution, the manufacture of butter, cheese, ice cream, evaporated and dry milk and other dairy products are adequately treated. A chapter each is devoted to dairy arithmetic and to miscellaneous tests for the chemical, biologic and sanitary examination of milk products. Useful tables are appended. The book is also of value to the food chemist and health official.

THE PRINCIPLES AND PRACTICE OF HYGIENE. By Dean Franklin Smiley, A.B., M.D., Medical Adviser and Professor of Hygiene in Cornell University, Adrian Gordon Gould, Ph.B., M.D., Assistant Medical Adviser and Assistant Professor of Hygiene in Cornell University, and Elizabeth Melby, M.A., R.N., Assistant Professor, Yale University School of Nursing. Cloth. Price, $2.50. Pp. 415, with 88 illustrations. New York: Macmillan Company, 1930.

One is at once impressed that this is a well printed book. The paper is good; the type and illustrations are clear; the binding is substantial and imparts a pleasurable sensation to the hand. The subject matter is clearly and interestingly presented. The illustrations seem of little value in setting forth the purpose of the book. They seemed to have been gathered from sources not particularly related to the subject matter. In places the subject matter did not seem well arranged. One can hardly understand, for example, why the discussion of the prevention of tuberculosis and hay-fever should be in the same chapter. This volume is intended as a textbook for nurses and can be recommended for this purpose.

HANDBOOK OF DISEASES OF INFANTS AND CHILDREN FOR STUDENTS AND PRACTITIONERS. By F. M. B. Allen, M.D., M.R.C.P., Assistant Physician to the Belfast Hospital for Sick Children. Cloth. Price, $5. Pp. 595. New York: William Wood & Company, 1930.

This is a well written, concise textbook of pediatrics and, as the author states, should help the general practitioner and medical student to acquire a competent acquaintance with the diseases and conditions peculiar to infants and children. The discussion of the diseases of the new-born is excellent, and the chapter on infant feeding, especially artificial feeding, is good, and shows that in England this subject has been modernized and brought down to date. The sections on marasmus, chronic gastro-intestinal catarrh and diarrhea (nutritional diseases) might be elaborated. The treatment of summer diarrhea might be improved by omission of the preliminary purge, which the author states is essential, and by the addition of protein milk, which has been found equally if not more successful than the other acidified milks.

A valuable appendix is added containing directions for the preparation of various special foods, and descriptions of the simpler methods of nursing and laboratory technic, as well as a list of the most common and useful prescriptions.

HANDBUCH DER PATHOGENEN MIKROORGANISMEN. Herausgegeben von W. Kolle, R. Kraus und P. Uhlenhuth. Lieferung 46, Band VII: Allgemeines über Trypanosomen und Trypanosomenkrankheiten. Von Prof. Dr. W. Nöller. Trypanosen des Menschen. Von Prof. Dr. P. Manteufel und Dr. M. Taute. Trypanosomosen der Tiere. Von Prof. Dr. W. Zwick und Prof. Dr. P. Knuth. Third edition. Paper. Price, 42 marks. Pp. 1079-1496, with 98 illustrations. Jena: Gustav Fischer, 1930.

The growth of knowledge concerning pathogenic micro-organisms is nowhere better illustrated than in this section on the diseases of man and animals caused by trypanosomes. The first edition of the Handbuch (1903) devoted only about a dozen pages to these organisms, while a supplementary volume to the first edition gave 75 pages to their consideration. The forty-sixth number of the third edition is given over entirely to trypanosomes and contains 417 pages. Such a prodigious expansion raises problems for the specialist and investigator as well as for the student. The material for this treatise on trypanosomes seems to be well selected and arranged. The neglect or overlooking of American and English work, so striking in certain numbers of the Handbuch, is not in evidence here. Every worker on trypanosomes and trypanosomiasis must have this book at his elbow.

AN INTRODUCTION TO NEUROLOGY. By C. Judson Herrick, Professor of Neurology in the University of Chicago. Fifth edition. Cloth. Price, $3. Pp. 417, with 140 illustrations. Philadelphia: W. B. Saunders Company, 1931.

The demand for Professor Herrick's "Introduction" has required ten printings and four revisions in the fifteen years since it first appeared. In this edition three chapters have been entirely rewritten; namely, those on the neuron, on reflex circuits and on the general physiology of the nervous system. All chapters have been revised in the light of increasing knowledge. While really and intentionally an "introduction" leading to a study of other books and atlases which give a more detailed account of morphology, it has proved itself an admirable introduction. The fundamental principles of nervous structure and function are set forth with a clearness and soundness which make it a most satisfactory textbook for students in psychology, education and sociology. And because of Professor Herrick's deep insight into the evolutionary development of "the master tissue" and of the clearness with which the nature of its different parts is presented in this book, it will continue to be of great service to students of anatomy and medicine.

PHYSICS OF RADIOLOGY FOR THE STUDENT OF ROENTGENOLOGY AND RADIUM THERAPY. By J. L. Weatherwax, M.A., Physicist, Philadelphia General Hospital. With a foreword by Henry K. Pancoast, M.D., Professor of Roentgenology, University of Pennsylvania. Leatherette. Price, $5. Pp. 240, with 126 illustrations. New York: Paul B. Hoeber, Inc., 1931.

The author has compiled the physical and clinical essentials for a beginner in radiology. Written from a practical point of view and with the physical theory abbreviated, it provides the radiologist a convenient handbook and the student a concise and readable textbook. The author explains the principle and operation of various x-ray measuring devices. Readers having a knowledge of physics can readily understand the mathematics. Practical problems are solved to aid the beginner in mastering the fundamental principles. The application of roentgen rays to malignant growths is described. Saturation curves and tables for different filters are given. Practical applications of radium with illustrations make up an interesting chapter.

IODINE SUPPLY AND THE INCIDENCE OF ENDEMIC GOITER. By J. B. Orr. Medical Research Council, Special Report Series, No. 154. Paper. Price, 4d. Pp. 18. London: His Majesty's Stationery Office, 1931.

This is essentially a preliminary report of a study covering ten counties in England and three in Scotland. In ascertaining the distribution of iodine, analyses were made of soils from representative farms, pastures from the same fields, milk from cows grazing the pastures sampled, eggs, potatoes, cabbages, blood from sheep slaughtered in the same district, and thyroids from the same sheep. In the report are given the results of analyses of 458 substances, including 373 food samples. The results of the study do not support the view that a deficiency of iodine in the food is definitely correlated with the occurrence of endemic goiter.

Medicolegal

Chronic Poisoning a Disease, Not an Accident

(Gunter v. Sharp & Dohme, Inc. (Md.), 151 Atl. 134)

Gunter had been mixing mercuric chloride and potassium cyanide powders for three years, in the course of his employment, before he became disabled. He was then found to be suffering from chronic nephritis, which he contended was an accidental injury within the meaning of the workmen's compensation act. The accident commission awarded compensation. On appeal by the employer and insurer, the Baltimore City court disallowed the award. Thereupon the workman appealed to the Court of Appeals of Maryland, which affirmed the judgment of the court below.

Only the testimony of the claimant's attending physician tended to prove a connection between the claimant's employment and his disease. The physician testified that it was possible that the claimant's condition was due to his work around chemicals and his inhaling their fumes; that his nephritis or Bright's disease was due to poisons which he probably absorbed in the plant where he worked; that his condition was possibly due to cyanide or mercury poisoning, but that he had not definitely seen anything in his examination of the claimant's body that suggested a chemical poisoning; and that the claimant could have had all of the symptoms complained of if he had not been working where he was.

The question, said the Court of Appeals, is whether the nephritis or Bright's disease of which the claimant complains is the result of an accidental personal injury or is an occupational disease. If it is an occupational disease, the accident commission was without authority to make an award, since the law makes no provision for compensation for such diseases. In support of his contention that his nephritis was an accidental personal injury, and not an occupational disease, the claimant relied on the case of *Victory Sparkler Co.* v. *Francks*, 147 Md. 368, 128 A. 635, 44 A. L. R. 363, in which it was said that if a disease is not the customary and natural result of a profession or industry per se, but is the consequence of some extrinsic condition or independent agency, the disease or injury cannot be imputed to the occupation nor be held to be an industrial disease. An "accidental injury," said the Court of Appeals, is an unforeseen event, occurring without design. An "occupational disease" is a diseased condition coming on gradually from the employee's work, the onset of which cannot be fixed at any particular time or attributed to any certain event. In the Victory Sparkler case, cited by the claimant, the injury, necrosis of the jaw, caused by phosphorus poisoning in a fireworks factory, was local in its effect and was referable to a certain time, place and cause, and it was held to be "accidental by every test of the word, and its accidental nature is not lost by calling the consequential result a disease." In the present case there is no evidence of the time when the physician suspected that the claimant was afflicted with Bright's disease or suspected that that would be the result of his earlier symptoms. No time can be ascertained with any definiteness when the claimant exhibited the symptoms that were found when he became incapacitated. When the physician awakened to the fact that his patient had Bright's disease, the case had evidently become chronic. There is no evidence of an acute attack during the last three years of the claimant's employment which might be referred to a particular cause and time. Bright's disease or nephritis may not be common among the employees of the occupation in which the claimant was engaged, but the testimony of his physician gives it that status, and in the absence of any other evidence in the record it is controlling. The claimant himself said that when he was asked to work in the bichloride room he saw the danger, but thought that by care he could guard against it. It is apparent, therefore, that there was nothing unexpected or unlooked for in some kind of sickness or discomfort resulting from his occupation. The physician's testimony itself makes of this an occupational disease, and as such it is not compensable under the Workmen's Compensation Act of Maryland.

Proof of Negligence as Proximate Cause of Death

(Smith v. Wharton (N. C.), 154 S. E. 12)

The defendant physician had had under his care for several months the plaintiff's 18 year old wife, who was seven months pregnant. Examinations by the physician showed her to be in good physical condition, except for a slight swelling of her feet and legs, until May 29, when her kidneys were found to be "in bad condition." The physician advised that the child be delivered immediately by operation. The operation, he said, was simple and could be performed either in a hospital or in the patient's home. It was agreed that the operation should be performed the following day in the patient's home. The defendant physician saw her at her home the next morning about 9 o'clock. He was told that she was feeling all right and that she had taken only a cup of coffee and a glass of milk for breakfast. The operation was begun at 10:45 a. m., under chloroform anesthesia, after an assisting physician had examined the patient's heart. It was finished about noon. The assisting physician left five minutes after the operation was finished. The defendant physician remained about thirty minutes longer, frequently examining the patient's pulse and observing her condition. Before he left he told the patient's husband that his wife was getting along all right. He had other patients whom he must visit, he said, and would meet the husband at his, the physician's office, about three miles distant, at 1 o'clock, and give him medicine for his wife. This was done, but while the husband was away from home his wife died suddenly, with only her mother and other members of the family present. There was evidence tending to show that just before her death she had a severe hemorrhage and that she did not fully recover from the chloroform and the shock of the operation.

The husband brought suit, claiming that the physician was negligent, first, in that he did not by the exercise of due care properly prepare his patient for the operation, and, secondly, in that after the operation he left the patient before she had fully recovered from the anesthetic and the shock of the operation, without providing for a competent nurse or for another physician to remain with her. This negligence, he asserted, was the direct and proximate cause of his wife's death. At the close of the plaintiff's evidence the trial court dismissed the suit. From this judgment the plaintiff appealed to the Supreme Court of North Carolina, where the judgment of the court below was affirmed.

We are of the opinion, said the Supreme Court, that there was no error in the judgment of the trial court dismissing this action at the close of the plaintiff's evidence. There was no evidence from which the jury could have found that the plaintiff was entitled to recover damages. There was no evidence legally sufficient to show a causal relation between the acts of the defendant, either of commission or of omission, and the death of the plaintiff's wife. The evidence tending to show that the patient died within an hour after the operation, and before she had recovered from the effects of the anesthetic or the shock of the operation, does not show that her death was caused by any breach of duty that her physician owed her. It does not appear that if the defendant, another physician, or a competent nurse had been with her, she would not have died, nor does it appear that her death was the result of any condition prior to the operation which could have been discovered by any examination that it was the duty of the physician to make. A physician is not an insurer of the life of his patient; if he fails to exercise due care in the treatment of his patient or in the performance of an operation, he cannot be held liable for the death, in the absence of evidence legally sufficient to show that his negligence caused it. The burden is on the plaintiff to show by evidence, not only that the defendant was negligent, but also that his negligence was the direct and proximate cause of his patient's death.

Insanity: When a Defense for Crime.—In order that insanity may be available as a defense for crime, it must appear that the defendant, when the act was committed, was so deranged and diseased mentally that he was not conscious of the wrongful nature of the act committed. Although a defendant may be laboring under some insane delusion or hallucination, still, if he understands the nature and character of his action and its

consequences and has knowledge that it is wrongful and criminal, such partial insanity, or the existence of such delusion or hallucination, is not sufficient to relieve him of criminal responsibility. Whether the defendant was, at the time he committed the act, legally responsible for it, as responsibility is defined by the law, is a question of fact entirely within the province of the jury.—*People v. Lizarraga (Calif.), 291 P. 434.*

Privileged Communications: Statute Inapplicable to Nurses.—A statute giving a privileged status to communications between a patient and his physician, entitling the patient to have such communications kept secret even in a court of law, is in derogation of the common law and must be strictly construed to limit the privilege to the parties named in the statute. A nurse, therefore, does not come within its provisions and may testify with respect to communications made by a patient.—*Goodman v. Lang (Miss.), 130 So. 50.*

Society Proceedings

COMING MEETINGS

American Association for Thoracic Surgery, San Francisco, July 1-3. Dr. Duff S. Allen, Washington University Medical School, St. Louis, Secretary.
American Dermatological Association, Toronto, Canada, June 15-17. Dr. William H. Guy, 500 Penn Avenue, Pittsburgh, Secretary.
American Laryngological Association, Atlantic City, June 15-17. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.
American Otological Society, Briarcliff, New York, June 17-19. Dr. Thomas J. Harris, 104 East 40th Street, New York, Secretary.
American Surgical Association, San Francisco, June 29-July 1. Dr. Lincoln Davis, 205 Beacon Street, Boston, Secretary.
Maine Medical Association, Greenville, June 25-27. Dr. Philip Webb Davis, 22 Arsenal Street, Portland, Secretary.
Montana, Medical Association of, Bozeman, July 8-9. Dr. E. G. Balsam, 208 North Broadway, Billings, Secretary.
Pacific Northwest Medical Association, Seattle, June 25-27. Dr. Frederick Epplen, Stimson Building, Seattle, Secretary.
Washington State Medical Association, Aberdeen, August 3-5. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.
Wyoming State Medical Society, Rawlins, July 13-14. Dr. Earl Whedon, 50 North Main Street, Sheridan, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Forty-Sixth Annual Meeting, held at Atlantic City, N. J., May 5 and 6, 1931

(Continued from page 1988)

VARIOUS FEATURES OF INFECTIOUS DISEASE

Vaccinal Encephalitis

DR. A. H. GORDON, Montreal: A boy, aged 11, vaccinated twelve days previously, developed an acute illness with headache, vomiting, meningeal irritation and cranial nerve palsies, with a temperature reaching 107 F. before death, which occurred two days after admission to the Montreal General Hospital and was preceded by coma. The cerebrospinal fluid was normal. Autopsy showed the typical changes in the central nervous system of perivascular infiltration and patches of demyelinization of the white matter.

The incidence of this disease in vaccinated individuals in England and Holland is 1 in every 15,000 vaccinations. The incidence in primary vaccination is 1 in 1,500 of all cases, and in revaccinations, 1 in 38,000. The incubation period in the majority of cases was from ten to fourteen days, and this with the constant clinical and postmortem changes suggested a clinical entity and rendered reasonable the suggestion of Hekman of Holland and Sir Thomas Horder of England that serum from recently vaccinated persons be employed in therapy. Single scarifications or intradermal injections are considered less likely to result in the complication of vaccination.

DISCUSSION

DR. SIMON FLEXNER, New York: May I add to Dr. Gordon's presentation that I regard the problem of postvaccinal encephalitis as more general than he indicated? The type of encephalitis sometimes following vaccination is known also to follow a number of exanthematous diseases, such as measles and chickenpox. The clinical course and histology separate the type from the epidemic encephalitis form. It is very doubtful whether the encephalitis is vaccinal in origin. Hence the specific therapy recommended must be regarded as highly empiric. The whole subject is now receiving attention from clinicians and pathologists, and more light on it may be hoped for before too long.

DR. WILLIAM H. PARK, New York: I was rather surprised to hear the suggestion of Dr. Gordon to use the serum of those who had been vaccinated. It would not be strong enough to prevent the disease. I don't think there is any evidence that it would be useful after the disease developed.

DR. THOMAS M. RIVERS, New York: Redlich, in 1927, reported twelve cases of encephalitis, and, in 1929, Flateau reported seventeen. It is interesting to note that these cases were similar to the one presented by Dr. Gordon with the exception that they were not preceded by any evident infection.

DR. F. G. BLAKE, New Haven: There have been three cases in young children at the New Haven Hospital with no preceding exanthematous disease and not following vaccination. In these cases there was the usual picture of demyelinization mentioned by the other speakers.

DR. A. H. GORDON, Montreal: I did not have enough cases to follow the intracutaneous method of treatment. As to the question raised by Dr. Park, whether one should give immune serum, it has not been proved what the vaccine has to do with this disease; but the constancy of the clinical and pathologic picture is strongly in favor of its association with the disease. No possible method of dealing with such a serious condition should be overlooked. As to the frequency of the picture in other diseases, that is true also, but these cases were so definitely associated with the vaccine that one could not avoid the conclusion. No seasonal incidence was noted, as far as could be determined.

Psittacosis: Pneumonia Experimentally Produced in Monkeys

T. M. RIVERS and G. M. BERRY, New York: Psittacosis in man involves chiefly the lungs. Since parrots, mice, guinea-pigs and rabbits, while susceptible to the virus, do not develop pulmonary lesions of significance, recourse was had to monkeys in the effort to reproduce a pneumonic process similar to that observed in man. Normal young *Macacus rhesus* monkeys were inoculated intranasally and intratracheally with liver and spleen emulsions of mice carrying a human strain of psittacosis virus. These emulsions were free from ordinary aerobic and anaerobic bacteria. Pneumonic lesions resulted. Vascular engorgement and thromboses, hemorrhage, serous exudation, fibrin deposition, infiltration of alveolar walls with large mononuclear cells, and desquamation of alveolar epithelium characterized the pathologic changes. This process began at the hilus and about the bronchi and spread through the alveolar walls toward the periphery but rarely involved the pleura. Resolution was rapid and occurred without fibrosis. The pulmonary process was unassociated with ordinary bacteria. The similarity of this pneumonia to that encountered in man is striking, and the concurrence of the different changes enumerated serves to distinguish the lesions from ordinary pneumonia and bacterial infections of the lungs.

DISCUSSION

DR. L. M. WARFIELD, Milwaukee: We had one severe case in a physician, aged 62, who was a bird fancier. He was bitten by a parrot. The parrot was examined post mortem. The illness had a curious onset, not quite like that of influenzal pneumonia. The lesion started at the hilus of the right lung and then spread widely throughout the lung. At autopsy a large part of the right lung was the seat of a slate gray consolidation. There was a fresh patch of pneumonia in the upper left lobe. The lesion in the parrot can scarcely be told from the human lesion as seen by lantern slides except that in man the alveoli are larger. There is the same thickening and infiltration of the alveolar walls and large round cell exudate in the alveoli. There was phagocytosis of polymorphonuclears and also of red blood cells. The spleen showed the same type of

phagocytic cell. There is a great similarity between the picture of the human lesion and that of the experimental lesion in the monkey.

DR. C. H. BUNTING, Madison, Wis.: Through the kindness of Dr. Warfield I have had the opportunity to examine the sections in his case of psittacosis and I was much impressed by the extensive phagocytosis of leukocytes and lymphocytes, by mononuclear phagocytes, not only in the pulmonary exudate, but also in the pulp of the spleen, and by the Kupffer cells in the liver. I should like to ask the authors whether their experimental animals showed this feature.

DR. T. M. RIVERS, New York: We studied the blood of one patient by means of the supravital technic. There was no significant rise in the monocytes. A definite lymphopenia, however, was noted early in the course of the infection. Rickettsia-like bodies were not found in the infected lungs of monkeys. The material with which the animals were inoculated contained such bodies, and mice inoculated with infectious material from them displayed similar structures. The monkeys had only minor lesions in the liver. In man, and in monkeys receiving the inoculum by way of the upper respiratory tract, the chief pathologic changes occur in the lungs. In mice and in parrots, however, the liver and spleen are the organs in which the principal lesions are found.

Studies on the Mechanism of Upper Respiratory Infection

DRS. A. R. DOCHEZ, K. C. MILLS and YALE KNEELAND, JR., New York: Two hypotheses have been presented for respiratory infection: as regards the individual and as regards the community. The first phase is becoming clear; the second is still obscure. Many organisms have been suggested, but years ago Kruger suggested that common colds were due to a filtrable virus. Recent observations tend to confirm this and our work seems to demonstrate this fact. The disease is readily communicable to anthropoid apes. We chose the chimpanzee, and the animal received an application into the nasopharynx of washings of infected nasopharyngeal material passed through filters. Symptoms of respiratory infection followed and if another animal was put in the same cage he took the infection. The same result can be obtained in human beings with bacteria-free filtrates. A chart was made of the passage of the infection through fourteen transmissions, starting with a human subject. With each transmission there was increased activity on the part of bacteria present, which were pneumococci, streptococci and Pfeiffer bacilli. If the animal carries hemolytic streptococci, they are transmitted to other animals.

Outbreaks of respiratory infection have peaks in October, January and April. The January outbreaks occur every year and the infection is more severe. The absences from schools are ten times as many as during the October peak. While there may be a special agent for influenza, the outbreaks of colds coincide with the periods of greatest bacterial activity and distribution, and it is the combination of these two agents that brings about epidemics known as influenza, or grip.

DISCUSSION

DR. WILLIAM H. PARK, New York: There was an opportunity to observe the increase of virulence of the bacteria, without the filtrable virus, in an institution of 400 children. The boys were on one side of the street, and among them 200 developed colds and pneumonias; while among the girls, who were housed in a separate place, there were no cases. The filtrable virus might have spread from one side of the street to the other, but the pneumococci did not do so. Of three assistants accidentally sprayed with Pfeiffer bacilli, two developed the disease. In 1918 there was a severe increase of respiratory disease due to increase of the various pathogenic types of bacteria with the colds.

DR. A. R. DOCHEZ, New York: I have been more interested in the highly contagious cold due to a filtrable agent. There are many examples of bacterial infection due to hemolytic streptococci which produce a type of pharyngitis difficult to distinguish from the common forms of upper respiratory infection. We have not tried to pass the organism of the common cold back from the anthropoid ape to human beings.

Serum Treatment of Hemolytic Streptococcus Pneumonia

DR. H. L. AMOSS, E. L. PERSONS and O. C. HANSEN, Durham, N. C.: A year ago in February a pupil nurse came down with acute sinusitis and acute nephritis. In spite of antral drainage the temperature varied between 97.5 and 105 F. Oliguria persisted, with increase of albuminuria and hematuria. Blood pressure was increased. The nonprotein nitrogen was 58 mg. per hundred cubic centimeters. On the seventeenth day there was lobular pneumonia, and the culture of hemolytic streptococci from the antrum was repeated from the sputum. We found an immunologic relation from the antrum strains, with the serum. We gave first an injection of 25 cc., then later 50 cc. more. Next day the temperature came to normal with marked diuresis. The patient began to improve and gain in weight and strength. A picture of mild anemia came back to normal.

Last year, among streptococcus sore throats, we had four cases of lobular pneumonia. We administered antistreptococcus serum, in two cases from strains sent by Dr. Wadsworth, one from erysipelas. We did not wait to test these serums immunologically. The patients were all very sick, but the results of serum injection were prompt and beneficial. In all cases the serums showed some immunologic relation to the antigens but did not resemble them any more than did scarlet fever serum.

DISCUSSION

DR. AUGUSTUS B. WADSWORTH, Albany, N. Y.: I think the differentiation of the streptococci should be based on the toxin-antitoxin neutralization rather than on cultural or such serologic character as specific agglutination, precipitation, or protection tests. The best method of comparison is the neutralization of toxins or toxic substances produced by the different strains with monovalent serums. The classifications that have been reported in the literature do not correspond to any of the characteristic manifestations of streptococcus infection, erysipelas, scarlet fever or puerperal infection. According to study of 500 strains, the New York 5 serum will neutralize the toxins of between 75 and 80 per cent of the streptococci, and that is not true of the serum of any other strain that I have found, with one exception. The toxins all differ slightly in the degree and character of their antigenic action. Neutralization with representative serums is the test that is most significant of the pathogenic activity of the streptococcus, and this fails to differentiate any strain of the streptococci that is a specific incitant of infection in man.

The Specific Action of a Bacterial Enzyme on Type III Pneumococci

DRS. O. T. AVERY and R. T. DUBOIS, New York: The pneumococcus is surrounded by a cell capsule, and its immunologic characters and specificity are dependent on the carbohydrate in that capsule. It is specific for each type, and virulence is intimately associated with capsule development. Without this capsule the cell can be taken up by the phagocytes, but the encapsulated forms resist phagocytosis. Each type of capsule possesses distinct chemical properties of complex sugars, different in their polarizing values, in acid content and in nitrogen content. Our studies have been directed toward discovery of an enzyme that would break down this capsule. From peat soil we have been able to obtain a bacillus capable of breaking down the pneumococcal capsule. We have extracted an active principle, which, when added to culture mediums containing type III, is capable of breaking down the capsule. Without this enzyme, the pneumococci again form the capsule. In mice experimentally inoculated with 100,000 fatal doses of pneumococci, 0.1 cc. of the enzyme product afforded protection. Even when treated as late as eighteen hours after infection, the mice survived. Studies showed that the capsule was dissolved. Our studies show that the pneumococcus is vulnerable to attack otherwise than by specific antibodies.

DISCUSSION

DR. WILLIAM H. PARK, New York: Was the protecting enzyme given intraperitoneally or in some other way?

DR. HENRY SEWALL, Denver: When a guinea-pig is injected on one side of the abdomen with a virulent culture of tubercle

bacilli and then two days later the opposite flank is injected with a rather large dose of tuberculin, the following phenomenon occurs: After from three to five days a nodule forms on the noninfected side. This nodule increases in size for ten or fifteen days and then suddenly disappears. I think that perhaps the condition exists here under which the resolution of the tuberculous material occurs. The bacilli are transported almost immediately from the site of the injection to the opposite side and excite certain tissue reaction. Then the dose of tuberculin acts on the animal tissue and causes resolution. Perhaps these phenomena are connected.

DR. O. T. AVERY, New York: In the experiments on mice, all injections were made intraperitoneally. The mice that recovered after the action of the enzyme have not been tested for specific immunity.

Immunologic Characteristics of Some Substances Obtained from the Gonococcus

DR. C. P. MILLER, JR., and C. K. BOOR, Chicago: Gonococci were grown on a solid tryptic digest medium from which the coagulable proteins had been removed. After washing, the organisms were separated by centrifugation. Each batch of 10 cc. of moist packed organisms was suspended in 2 liters of tenth normal sodium hydroxide and allowed to stand in the refrigerator over night. The clear supernatant solution was separated from the insoluble material by centrifugation and treated with acetic acid to maximal precipitation. This acid precipitate was redissolved in hundredth normal sodium hydroxide, filtered and reprecipitated with acetic acid from four to six times. The final solution in hundredth normal sodium hydroxide was then dialyzed in cellophane bags against distilled water, and the neutral protein suspension was evaporated to dryness at from 45 to 50 C. in an air current. The usual tests for proteins were all positive.

The nonprotein fraction was isolated by evaporating to small volume the supernatant liquid from the first acetic acid preparation. It was then placed in a boiling water bath for fifteen minutes, filtered from the coagulated protein, and treated with about ten volumes of 95 per cent alcohol. After it had stood long enough to insure the complete denaturation of any alcohol-denaturable proteins, the precipitate was dissolved in water, filtered, evaporated to small bulk and again treated with alcohol. After two or three further treatments with alcohol, an aqueous solution of the resulting precipitate was dialyzed and evaporated to dryness. This fraction gave none of the usual tests for protein (biuret, Millon, xanthroproteic, Hopkins-Cole, sulphosalicylic acid, and phosphotungstic acid tests). It gave a positive Molisch test. It appears, therefore, to consist largely of carbohydrate, presumably a polysaccharide since it withstood dialysis and reduced Benedict's solution only after hydrolysis. In the dry state both the protein and the nonprotein substances have been kept at room temperature without deterioration.

Immune serums were prepared by injecting rabbits intravenously with live gonococci and with the "nucleoprotein." Precipitin tests were made by stratifying the antigen over the serum in small tubes. Readings were made after standing one hour at room temperature.

Antigonococcus serum gave positive precipitin reactions with some of the "nucleoprotein" in dilutions of 1:1,000,000. No evidence of strain specificity was encountered among the fractions obtained from 5 strains of gonococci, which included old as well as recently isolated strains. Nor was the reaction species specific, for precipitation occurred with both fractions in dilutions of 1:1,000,000 when tested with antimeningococcus serum. The nonprotein fraction in equally high dilution was precipitated by antipneumococcus serum, type III. Positive reactions in lower dilutions (1:1,000 and 1:10,000) were obtained with antipneumococcus serum types I and II.

Antigonococcus and antimeningococcus serums gave positive precipitin reactions with the soluble specific substance of pneumococcus types II and III, and with the pneumococcus nucleoprotein in dilutions of 1:1,000 and 1:10,000. (For these materials the authors are indebted to Dr. O. T. Avery.) We believe that the nonprotein substance isolated from the gonococcus is analogous to the non-type specific somatic carbohydrate obtained by Tillett and Francis from rough forms of pneumococci, called by them the C fraction.

Aspects of Chronic Pulmonary Infections

DR. A. K. KRAUSE, Tucson, Ariz.: Certain children, who have frequent colds, are not suspected of having lung lesions. They frequently end up with the otolaryngologist. Clinical examination sometimes reveals râles at the base, and the roentgenogram shows small patches of infection comparable to lung lesions, but at the base instead of at the top. Later the children develop pneumonia, the lesions taking place where râles were heard and minute patches of infection encountered. These children are greatly handicapped if not treated. Treatment is tedious, extending over several years. Yet, if the children are not treated, later they may get a bronchiectasis. The time for treatment is in the early stages when the lesions are not larger than the size of a pea. The procedure is to use any means that will avoid recurrent colds. Climatic therapy is to be recommended.

Tuberculosis in Medical Students

DRS. EUGENE L. OPIE, H. R. M. LANDIS, F. M. MCPHEDRAN and H. W. HETHERINGTON, Philadelphia: For five years we have been making a number of tests in a series of studies to determine the frequency of tuberculosis among those in apparent good health. Examination showed many cases of grave lesions among students. In a group of 236 college students, 85 reacted to tuberculin. Examination of a group of medical students showed that there was an increase in calcareous lesions among these and that the apical lesions increased from year to year during the medical course. In a group of 439 medical students, 93 reacted to tuberculin. In a group of medical students showing lesions below the clavicle there was 1 case in the first year, none in the second year, 6 cases in the third year and 13 cases among the fourth year students, thus showing a high incidence of grave tuberculous lesions among individuals presumed to be in good health.

The Problem of Pulmonary Tuberculosis in Medical Students

DR. REGINALD FITZ, Boston: As physician to students of the Harvard Medical School for the last four years, I have acquired certain vivid impressions in regard to various problems that have arisen pertaining to medical students and their health. The occupation of being a medical student appears to carry with it certain risks. Some of our men have died and the common causes of death encountered, as one might predict, have been suicide, accident, and fulminating acute infections.

In each class going through the four-year work, approximately half the members have come under medical or surgical supervision at some time for illness or injury severe enough to demand attention and to require more than three days' time away from work. These illnesses and injuries on the whole have been mild but have covered an astonishingly wide field; tuberculosis has been encountered but rarely. Tuberculosis, however, while unusual, has been an important cause of disability on account of the length of time necessarily spent in recovery and also because of the demoralizing effect of a long illness on a young man's morals and ambition. Tuberculosis has not been easy to recognize in its early stages. Among 424 men roentgenographed as part of a general physical examination, but one case of tuberculosis has been so detected. Routine chest films have been made on all men underweight for age and height, giving a history of contact exposure to tuberculosis, with an antecedent history of pleurisy or tuberculosis, or with physical signs that appeared at all unusual. Certain cases with the calcified lesion of healed tuberculosis have been encountered. These have been followed up carefully and have shown no tendency to develop signs of activity.

In the few cases that have developed active tuberculosis, the disease has become manifest unexpectedly and with considerable acuteness. Patient 1 of our series had never been seriously ill. In the fall he felt well, was of normal weight, and was in excellent condition as judged by ordinary physical examination. About March 1, he felt out of sorts, and from March to May lost 20 pounds (9 Kg.), when he reported "sick." Physical and roentgen examination at that time showed an extensive lesion. Patient 2 felt well at the end of the school year. Physical examination in the fall was negative. During the winter he kept his weight and lost no time through illness. In July

he went in swimming and suffered a slight hemoptysis. This was the first manifestation of early, active, pulmonary tuberculosis. Patient 3 had been roentgenographed with negative results in 1928 and 1929, because he was underweight. He felt perfectly well. In 1930 he returned with definite areas of infiltration, with the characteristic roentgen appearance. Patient 4 was perfectly well at the beginning of the school year. One month later he developed pleurisy with effusion.

It appears difficult to prevent accidents and acute infections among medical students. It should be possible to prevent development of despondency with resultant suicide, by proper methods of supervision. While it may be impossible to prevent the occurrence of occasional cases of pulmonary tuberculosis, determined effort should be made to recognize it early, since the disease is serious from the point of view of time necessary to cure it, and it may develop unexpectedly. To accomplish this, if for no other reason, a well organized efficient students' health service is an essential part of the equipment of a modern medical school.

DISCUSSION ON TUBERCULOSIS IN MEDICAL STUDENTS

DR. H. R. M. LANDIS, Philadelphia: Any one who has spent any time working among college students is impressed with the relative frequency of tuberculosis during the medical college course. Often it is apparent during internship or a year to two following. It presents a difficult problem. What will be done with the man who shows these lesions if he has no symptoms? Shall he be removed from his studies as a temporary measure or allowed to continue under strict supervision? It resolves itself into a definite problem of the activity of the disease. I do not think Dr. Opie emphasized that as strongly as he should have. The symptoms were elicited only by close questioning. The men assumed themselves to be perfectly well. Many of them had internships when they showed these extensive lesions. The question is, Is this an index of medical students as a whole or was it the problem of this particular school? The study should be carried on for five or six years. It may vary from year to year, depending on the incidence of carriers. It raises the question whether the curriculum of the medical school, with its terrific pressure for three or four years, is a factor in breaking down the resistance of the men who lose weight under the stress and strain. These problems have to be decided. I think it would be invaluable if, in every medical school in the country, this health service could be carried on to check up what the general expectation would be. It would vary probably with the number of carriers of latent infection.

DR. HENRY SEWALL, Denver: It must be admitted that these lesions are far advanced. Why were they not discovered earlier? I know it is not considered in line with modern medical advancement when one talks of climate, but I live in a place where the population consists largely of persons with healed tuberculosis. It is a place where they can hold their tuberculosis in check and get interest on the health they are acquiring, and at the same time make a living. We used to have young men come to the college in Colorado to work their way. I know that now there is a popular contempt for climate, but there are a hundred places where climatic advantages may be obtained. I consider climate only a small fraction of the cure, but one is working with minute fractions when one treats tuberculosis.

DR. W. W. FORD, Baltimore: Some years ago, work on tuberculosis among medical students was carried out in Baltimore in the attempt to find the prevalence. A group of medical students was compared with a group of nonmedical students at the university, whose economic conditions were parallel, except that the medical students probably had more means. The housing conditions were about the same. The question arose as to the effect on the health of stress and strain to which students were subjected during the medical curriculum, and it seemed that the medical students were not under any more strain than the others. The results of the study were fairly complete and apparently indicated that the amount of tuberculosis among university students was small as compared with the incidence among the medical students.

DR. ELMER H. FUNK, Philadelphia: Dr. Krause has pointed out the importance of recognizing the etiologic relationship between recurring infections of the upper respiratory tract and disease of the lower respiratory tract. He has stressed the importance of preventing recurring reinfection of the lower respiratory tract. It should be recalled that in a small but important group of nontuberculous pulmonary lesions, especially in children, bronchial obstruction from an unsuspected, perhaps nonopaque, foreign body, inflammatory narrowing, and blocking by inspissated secretions may be etiologic factors the recognition of which is important in treatment.

DR. C. D. PARFITT, Gravenhurst, Ont.: It has been suggested that the high incidence among medical students is due to infection, possibly to undiscovered cases of tuberculosis in the wards. In Oslo an investigation showed that 14 per cent of the nurses developed tuberculosis, and at Winnipeg that from 15 to 20 per cent of the nurses acquired it. The conclusion is that there are many unrecognized cases of pulmonary tuberculosis in the wards and that infection plays a part in the high incidence among medical students.

DR. F. M. MCPHEDRAN, Philadelphia: In racial studies we found lesions in 6 per cent of Italians and Negroes, and 2 per cent among the white population. It is of interest to note that the bronchiectatic type is relatively rare. Children are apt to suffer repeated severe infections and in between the attacks have only a slight cough. In this group, followed over eight years, many cleared up but some persisted. Sinus lesions formed only a small proportion. There was a history of previous measles or whooping cough in a great percentage. In a study we made of school children we had a large number of films taken, and we picked out certain films and asked to have the children returned to us for reexamination. In a large number of cases that had appeared suspicious in the roentgenograms we found frank pneumonia.

DR. A. K. KRAUSE, Tucson, Ariz.: In the study of a large number of cases of tuberculosis, now and then foreign body obstruction would play a part. What has interested me is what Dr. Landis has pointed out, the difficulty of giving practical advice. What means are there of discovering the cases in the absence of symptoms? What criteria shall we go by? To advise in these cases is the hardest job in medicine. Sometimes it happens that an earlier roentgenogram of the chest was taken for some reason, and from this it can be determined whether the lesion is progressive or not. I may see a film which shows marked changes, but, in the absence of symptoms, it will help to look up a film of five years ago to see whether there are evidences of progress. If there are none, I would not regard that man as an invalid but would keep him under the strictest observation. How can a tuberculosis that is likely to become active be defined? I do not believe there is any way of doing this from an anatomic point of view. I think it comes down to the functional tests and the most meticulous and detailed history taking. The slightest deviation from normal must be given the proper attention. I think it is a serious matter to invalid a man, no matter what the tuberculosis is. The problem at 20 is an entirely different one from that at 60 years of age. A man at 60 has probably struck a balance with his tuberculosis and can keep at work. The best prognosis is the way the patient is carrying for the tuberculosis, and the balance he has struck with his disease.

DR. EUGENE L. OPIE, Philadelphia: We limited our paper to the frequency and severity of the lesions. We have been making a careful survey of conditions and etiology of the lesions. The first step to take is to test every group. The incidence among law and dental students is not materially greater than among other classes of college students. In regard to what might be done to prevent the course of such infection, I think that the first step is to make thorough examinations. It has become evident from the information we have given students and the discussion among them that the possibility of an infected individual occurring among them without recognition is past. I think students themselves recognize the importance of these examinations. Each man has given particular attention to his own case. We have had a number of cases of a progressive lesion. I think that, with repeated examinations and advice, students will do a great deal to help themselves.

(To be continued)

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Cancer, New York

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*Tumor Immunity. T. Lumsden, London, England.—p. 563.
*Occupational Neoplastic Disease. C. D. Haagensen, New York.—p. 641.
*Suprarenal and Tumor Growth. W. H. Woglom, New York.—p. 704.
*Influence of Aqueous Extract of Suprarenal Cortex on Growth of Carcinoma, Sarcoma and Melanoma in Animals. K. Sugiura.—p. 707.
*Biochemical Studies of Malignant Conditions. J. H. Roe and H. M. Dyer, Washington, D. C.—p. 725.
Morphology of Heritable Color Patterns in Mexican Killifish, Platypoecilus. M. Gordon, Ithaca.—p. 732.
Studies in Cytology of Cancer. M. Levine, New York.—p. 788.
New Method of Differentiating Testicular Tumors by Biologic Means. R. S. Ferguson, H. R. Downes, E. Ellis and M. E. Nicholson, New York.—p. 835.
Lymphoblastoma of Spleen. E. Kellert, Schenectady.—p. 844.
Sarcoma Associated with Metastases from Breast Carcinoma. C. W. Lester, New York.—p. 850.
Neurofibroma of Ovary Associated with Recklinghausen's Disease. F. R. Smith, New York.—p. 859.
*Diagnosis of Primary Carcinoma of Lung by Aspiration. G. S. Sharp, New York.—p. 863.
What Shall American Society for Control of Cancer Say to Layman Regarding Organization of Special Cancer Services in General Hospitals and Cancer Clinics? R. B. Greenough, Boston.—p. 871.

Tumor Immunity.—From experimental observations described by Lumsden, two conclusions of fundamental importance appear to be justified. 1. Anti-malignant-cell bodies lethal to cancer cells but harmless to normal tissue cells can be produced. 2. When an implanted tumor already established in the body is gradually destroyed by injecting antiserum or solution of formaldehyde into it, active immunity against the tumor is induced by a mechanism that may be called autovaccination. The term cure in relation to cancer has in the author's view a double significance. It connotes disappearance or removal of the existing new growth and the induction of some mechanism that will prevent recurrence. Surgery and irradiation (as at present applied) achieve the first object more or less satisfactorily. Unfortunately they have little if any power to evoke immunity and so are not to be regarded as true "cures" in the foregoing sense. Conversely, autovaccination treatment by inoculation by antiserum is an excellent method of evoking immunity, but it is not easy to maintain a concentration of antibodies in the tumor area sufficient to destroy all the cancer cells. Solution of formaldehyde as a reagent stands between antiserum and irradiation. It is a less potent immunizer than antiserum but more powerful as a destroyer of the existing growth. At present no single mode of treatment is entirely satisfactory both as a "destroyer" and as an "immunizer." The most hopeful means of attaining the "cure" of cancer appears to be to inoculate antiserum into the primary cancer (or the arteries supplying it), localizing it there by constriction or epinephrine, and if necessary thereafter, to complete by surgery or irradiation the local destruction of the tumor.

Occupational Neoplastic Disease.—Haagensen has found a high incidence of skin cancer among employees in gas works, probably the result of their exposure to tar, and among petroleum refinery workers as a result of their contact with crude oil and its distillation fractions. His studies of incidence also lead him to conclude that occupational exposure to lubricating oil, as in the case of mechanics and machinists, predisposes to cancer of the penis and scrotum—a predilection as to anatomic site which seems best explained by the uncleanliness of the external genitalia so common in laborers. A significant excess of cutaneous cancer among outdoor workers, affecting particularly the face and lower lip, confirms the importance of sunlight in the etiology of skin cancer. Although he did not find any new types of occupational neoplastic disease, he describes some rare forms, such as lymphatic leukemia caused by radium. The not infrequent changes in the blood picture resulting from exposure to roentgen rays and radioactive substances warrant monthly blood counts in all such workers. The fact that metastases occurred in 63 per cent of his cases of occupational roentgen cancer suggests that this type of carcinoma is more malignant than some authors have reported it to be. This observation may indicate that its treatment should be more radical. A study of the cases of cancer of the lung and bladder showed no apparent association with occupation. In the data examined the author found a high incidence of skin cancer in some groups — such as clergymen — in which an occupational risk was not apparent. This suggests that occupational exposure is only one of the probably multiple etiologic factors of cancer.

Suprarenal and Tumor Growth.—Woglom treated two widely known mouse tumors (carcinoma 63 and sarcoma 180). Twenty-seven tumor bearing mice were given suprarenal from rabbits previously treated with the tumor strain which these mice bore, while twenty-five others received suprarenal from normal rabbits. The material was introduced subcutaneously at a distance from the tumor, in the dose and at the intervals prescribed by Arloing and his associates, and in the form either of intact fragments or of glycerin extract. Although it had been planned to repeat their experiments on a rather large scale, it soon became apparent that the treatment did not contain a promise of success, and the work was accordingly abandoned. No delay in growth could be discovered, though it should be borne in mind that this statement applies only to the two neoplasms used. It may well be that an occasional tumor could be found as susceptible as that employed by the French authors, but a treatment so narrowly restricted as this would hardly be a promising subject for extensive inquiry.

Aqueous Extract of Suprarenal Cortex.—Sugiura investigated the therapeutic effects of an aqueous extract of sheep suprarenal cortex, prepared according to the method of Coffey and Humber, on the Flexner-Jobling rat carcinoma, the Sugiura rat sarcoma, Bashford mouse carcinoma 63, a transplantable mouse melanoma, and the Rous chicken sarcoma. Single or repeated subcutaneous or intramuscular injections of the aqueous extracts of the cortical tissues showed no curative, retarding or accelerating influence on the tumor growth. Injection of the suprarenal cortex extracts brought about neither early tumor ulceration nor prolongation of life in the tumor-bearing animals. Injection of the aqueous extracts of suprarenal cortex did not have any appreciable effect in checking the growth of spontaneous mammary carcinomas of mice.

Biochemical Studies of Malignant Conditions.—Roe and Dyer state that the blood of fowls bearing Rous sarcoma 1 has a glycolytic activity about twice as great as that of normal fowls. This is a primary change resulting apparently from an overflow into the blood stream of the glycolytic enzyme, which Warburg showed to be in tumor tissue in greatly increased amounts. An examination of the glycolytic activity of the blood of sixteen patients with malignant tumors gave values that are within normal limits. The determination of the glycolytic activity of the blood is therefore of no clinical value in studying malignant conditions. The discrepancy between the glycolytic activity of the blood of hens with Rous sarcoma 1 and that of the blood of patients with malignant conditions is probably due to the greater ratio of tumor tissue to normal tissue in the fowls with the sarcoma.

Diagnosis of Carcinoma of Lung by Aspiration.—According to Sharp, bronchoscopic examination is indicated in all suspected neoplasms of the lungs and at such times a biopsy should be done if questionable tissue is encountered. However, should the lesion be in one of the upper lobes, biopsy can seldom be done with the bronchoscope. Similarly, lesions in the parenchyma near the periphery of the lower lobes often offer the same difficulty. In this group of cases, aspiration is shown to furnish a positive specimen and it may therefore supplement the bronchoscope to advantage.

American J. Medical Sciences, Philadelphia

181: 453-596 (April) 1931

*Cod Liver Oil and Vitamins in Relation to Bone Growth and Rickets. H. A. Harris, Ensley, Ala.—p. 453
*Absorption of Calcium from Gallbladder. E. Andrews and L. Hrdina, Chicago.—p. 478.
*Rheumatic Peritonitis. F. C. Wood and E. L. Eliason, Philadelphia. —p. 482.
Tooth in Pleural Cavity. I. Davidsohn, Philadelphia.—p. 494.
*Hypoglycemia with Coma in Case of Primary Carcinoma of Liver. W. H. Crawford, Upper Darby, Pa.—p. 496.
*Agranulocytosis (Malignant Neutropenia): Nine Cases, Two with Recovery. W. Dameshek and M. Ingall, Boston.—p. 502.
Idiopathic Aplastic Anemia or Aleukia Hemorrhagica. E. S. Mills, Montreal.—p. 521.
Idiopathic Neutropenia. C. W. Baldridge and R. J. Needles, Iowa City. —p. 533.
Mesenteric Small Vessel Sclerosis with Ulceration and Gangrene of Enteric Tract. P. Zeek and J. J. Phair, Cincinnati.—p. 548.
*Emetine and Treatment of Amebic Colitis. A. C. Reed, San Francisco. —p. 553.
Advantages for Atmospheric Control Room of Quasicontinuous Record of Oxygen and Carbon Dioxide. J. G. M. Bullowa and G. Lubin, New York.—p. 560.

Cod Liver Oil and Vitamins.—Harris states that from a consideration of the history of the vitamins, and of the train of idiosyncrasies therein entailed, from color reaction, the chemistry of bone and the kaleidoscopic changes of view stated by interested manufacturers, from the theory of the rôle of the vitamins in bone formation and from the theory of the peculiar efficacy of cod liver oil in the treatment of rickets, there emerges this one fact: The most reliable weapon in the treatment of rickets is cod liver oil.

Absorption of Calcium from Gallbladder.—In experiments on dogs, Andrews and Hrdina found that in cystic duct obstruction the relatively high calcium content of the cystic duct bile is gradually lowered and in the presence of infection it is rapidly lowered.

Rheumatic Peritonitis.—Wood and Eliason report the case of a girl with a past rheumatic history and a well marked rheumatic cardiac lesion who developed lower abdominal pain, diarrhea and signs of peritoneal irritation. She was operated on under the supposition that a ruptured appendix and pelvic peritonitis were present. Operation disclosed an abundance of clear fluid in the peritoneal cavity and an acute serositis and subserositis of the peritoneum of unknown etiology. No suppurative focus was found in the abdomen, despite careful exploration. Within a few days after operation the abdominal signs and symptoms largely subsided, but the fever and general phenomena continued unabated. Nine days after operation acute pericarditis developed, and after a stormy course of typical cardiac rheumatism of six weeks' duration the patient died. No signs of gonorrheal infection had been noted at any time. Cultures from the peritoneum and subsequent ones obtained from a pericardial effusion were sterile. It seems worth while, therefore, to bear in mind the possibility of rheumatic peritonitis in the differential diagnosis of abdominal pain when it occurs in a patient with signs of present or past rheumatic fever.

Hypoglycemia with Coma in Carcinoma of Liver.—A case of spontaneous hypoglycemia is reported by Crawford. The chief lesion was in the liver, a primary medullary carcinoma, together with foci of parenchymatous degeneration. The pancreas and its islands of Langerhans, the suprarenals and the pituitary body were apparently normal. There was a complete loss of the ability to stabilize carbohydrate metabolism, in that the blood sugar level was not spontaneously maintained at the normal height. Sufficient normally appearing liver tissue was apparently remaining, so that the mechanism producing the hypoglycemia is still unknown.

Agranulocytosis.—Dameshek and Ingall report nine cases diagnosed as agranulocytosis (malignant neutropenia). Four of the cases were typical of the "angina agranulocytica" described by Schultz, the other five being atypical in one or another feature. Two of the cases were in infants. Two of the patients recovered. In one case arsphenamine injections constituted in all probability an etiologic factor. The diagnosis of the disease, its blood picture, and various clinical features are discussed. The recovery phase, with its marked monocytosis and histiocytosis, was studied in two cases. It is felt that agranulocytosis is a symptom complex dependent primarily on an abnormal reaction of the bone marrow to severe sepsis. Gradations can be seen between the typical case with angina and those cases of sepsis with an atypical leukopenia.

Emetine and Treatment of Amebic Colitis.—Reed emphasizes that emetine is a powerful, dangerous and valuable remedy whose complete action is not yet known. It must therefore be handled with caution and with constant watch for initial symptoms of emetine poisoning. The treatment of intestinal amebiasis must cover a sufficient duration of time, irrespective of symptoms. The ideal treatment must cure the maximal percentage of patients, with minimal risk, and with least possible interference with the patient's usual activities.

American Journal of Public Health, New York

21: 329-478 (April) 1931

*Flocculation Experiments with Variola and Vaccinia Virus. L. C. Havens and C. R. Mayfield, Montgomery Ala.—p. 329.
Smoke Eradication to Save the Health Value of Urban Sunshine. F. O. Tonney and C. R. DeYoung, Chicago.—p. 344.
*Challenge of Malaria in South. J. A. Ferrell, New York.—p. 355.
Cost of Malaria Control. J. A. LePrince, Memphis, Tenn.—p. 378.
Screening and Mosquito Proofing as Elements in Malaria Control. H. R. Fullerton, Nashville, Tenn.—p. 382.
Olean City Epidemic of Typhoid Fever in 1928. A. S. Dean, Buffalo. —p. 390.
Camp Hygiene and Sanitation. J. Felsen, New York.—p. 403.

Flocculation Experiments with Variola and Vaccinia Virus.—Havens and Mayfield present experimental evidence that the intradermal or intravenous inoculation of vaccinia virus in rabbits is followed by the appearance of specific flocculating properties in their serum. Vaccination of the human subject stimulates the production of precipitins against vaccinia virus. The serum of four persons acquired this power to flocculate the virus as early as the tenth day following vaccination.

Malaria in South.—Ferrell states that field studies of malaria have been carried on more or less continuously in the South since 1915 by the official organizations aided by the cooperating voluntary health agencies. Knowledge as to the characteristics and habits of the three species of *Anopheles* has been enlarged; the relative value of spleen blood, and histories as bases for diagnoses and for indexes have been studied. Moreover, the conditions under which drainage, paris green, screening and the use of quinine or other drugs may be effective have been studied. To what extent the approach to malaria control has been influenced by the reports of these investigations is not known. It has been observed that the disease generally is more or less localized and that control measures must be aimed at the focuses of infection. The factors making for the general recession of malaria have not been convincingly evaluated. The extension of drainage and agriculture seems to have been related to the decline, but the influence of rainfall during the *Anopheles* breeding season seems to be the most important single factor in the areas still classed as malarious.

American Review of Tuberculosis, Baltimore

23: 333-460 (April) 1931

*Experimental Joint Tuberculosis: Attempt to Produce Localized Lesions in Guinea-Pigs. W. J. Spring, New York.—p. 333.
*Id.: Comparative Effects of Tuberculosis Infection in Normal and Previously Infected Guinea-Pigs. W. J. Spring, New York.—p. 346.
*Leukocytic Reaction in Tuberculosis Patients Receiving Artificial Pneumothorax. E. M. Medlar and G. S. Pesquera, Mount McGregor, New York.—p. 367.
Concerning Desensitization of Tuberculous Guinea-Pigs. J. Weinzirl and R. M. Bohart, Seattle.—p. 393.
Theory of Mechanism Underlying Phosphatide Precipitin Test in Tuberculosis: Study of Two B C G Vaccinated Children. C. A. Doan and D. M. Moore, New, York.—p. 409.
Serum-Calcium in Pulmonary Tuberculosis. J. Kaminsky and D. L. Davidson, Rutland, Mass.—p. 422.
Proportions of Water and Other Inorganic Constituents in Heart Muscle of Tuberculous Individuals. L. C. Scott, New Orleans. —p. 429.
Cerebral Air Embolism Complicating Artificial Pneumothorax: Case. C. H. Andrews, Fort San, Saskatchewan.—p. 435.
Insomnia in Tuberculosis. W. C. Service, Colorado Springs.—p. 440.
Racial Tuberculosis in Syria. R. H. Goodale, Beirut, Syria.—p. 456.

Attempt to Produce Localized Joint Tuberculosis in Guinea-Pigs.—Spring injected three types of human tubercle bacilli, of varying virulence in varying measured doses, into the knee joints of guinea-pigs previously sensitized by infection with a tubercle bacillus of low virulence. Tuberculous lesions

of the synovia, and in some cases of the bone marrow, were produced, the severity of the lesions apparently depending more on the virulence of the micro-organism than on the dose within the range examined. The organism virulent enough regularly to produce joint lesions of appreciable severity usually caused severe visceral tuberculosis.

Effects of Tuberculous Infection in Normal and Previously Infected Guinea-Pigs.—Following a single measured dose of tubercle bacilli, injected by Spring into the knee joint, tuberculous guinea-pigs showed clinically an immediate inflammatory reaction more severe and of longer duration than that shown by normal animals. Between the eighth and the twelfth days in most animals, but considerably later in one group, the previously normal guinea-pigs developed a second joint inflammation, severe and of sudden onset. This was simultaneous with the appearance of tuberculin sensitiveness in the one group tested. The symptoms of inflammation recurred also in the previously sensitized animals, but much more gradually and on the average later. The accompanying pathologic changes corresponded to the clinical observations. Almost to the end of the experiment the average severity of joint involvement remained somewhat greater in the previously normal animals, though the two groups overlapped widely. Until the eighty-third day the extent of visceral tuberculosis was slightly greater in the previously normal group.

Leukocytic Reaction.—Medlar and Pesquera believe that the efficacy of collapse therapy in pulmonary tuberculosis can be judged more accurately by a leukocytic graph than by any other single procedure. Any case of pulmonary tuberculosis considered suitable for collapse therapy, which maintains a septic or a hyperplastic leukocytic picture consistently for two months under strict bed-rest therapy, should have the benefit of this treatment. Further delay, arising from an apparent improvement of the patient, may prove deleterious. The size of the lesion should not influence the decision. If within six months after collapse therapy has been instituted the leukocytic picture does not show a trend toward improvement the collapse can be judged ineffective, if progressive tuberculosis in the contralateral lung or in other organs can be excluded. Additional methods, such as pneumolysis, phrenicectomy and thoracoplasty, should then be seriously considered.

Archives of Ophthalmology, Chicago

5: 517-690 (April) 1931

Trephine Operation: Pressure and Dirt in This Operation, with New Devices for Control. C. B. Walker, Los Angeles.—p. 517.
*Bacterium Granulosis in Trachoma. W. C. Finnoff and P. Thygeson, Denver.—p. 527.
*Chiasmal Syndrome Produced by Chronic Local Arachnoiditis: Eight Cases. W. M. Craig and W. I. Lillie, Rochester, Minn.—p. 558.
*Extraction of Cataract. A. Knapp, New York.—p. 575.
Intra-Ocular Blastomycosis. V. J. Schwartz, Minneapolis.—p. 581.
Rosette Formation in Eyes of Irradiated Human Embryos. I. Goldstein and D. Wexler, New York.—p. 591.
*Paracentral Field in Early Glaucoma. L. L. Sloan, Baltimore.—p. 601.
Biochemical Investigation of Nitrogen, Weight and Water Content of Crystalline Lenses. P. W. Salit, Iowa City.—p. 623.
*New Operative Procedure in Glaucoma. W. F. Swett, San Francisco.—p. 634.
Test for Retinal Function in Cataractous Patients. B. Friedman, New York.—p. 636.
Nystagmus of Ocular Origin. J. E. Lebensohn, Chicago.—p. 638.

Bacterium Granulosis in Trachoma.—Finnoff and Thygeson have recovered a minute gram-negative motile rod, apparently identical with that described by Noguchi under the name of *Bacterium granulosis,* from five of thirteen white persons, and from one Japanese with advanced trachoma. The objections raised by Lindner regarding the original Indian cases studied by Noguchi cannot be applied to these cases because of the presence of pannus and advanced scarring in all but two cases. *B. granulosis* was recovered also from two of fourteen trachomatous Indian children studied. The bacterium is either rare or absent in nontrachomatous diseases of the conjunctiva. *B. granulosis* may be considered more characteristic of trachoma than the inclusion bodies of Prowazek or the initial bodies of Lindner, since it can be recovered from patients having advanced disease at a time when the inclusion bodies and initial bodies are usually absent. The probable reason for the failure of former investigators to discover the organism lay in their use of unsuitable mediums and their failure to cultivate at the optimal temperature of 30 C. The bacterium was not agglutinated by serum that was tried from a single case of trachoma. Skin tests with *B. granulosis* antigen have been uniformly negative, with one exception. Bacteria morphologically identical with *B. granulosis* have been seen on and in the epithelial cells in smears taken from trachomatous patients and from animals having the experimental disease. Inoculation of *Macacus rhesus* monkeys with suspensions of *B. granulosis* has resulted in the production of a granular conjunctivitis identical with that described by Noguchi and also with that resulting from the injection of human trachomatous material. Contact infection occurred in one of two monkeys exposed. The bacterium has been successfully recovered from two animals having an advanced disease. The results would seem to confirm those of Noguchi in all essential respects. Trachoma in monkeys, however, is not identical with that in human beings.

Chiasmal Syndrome.—According to Craig and Lillie, chronic local arachnoiditis affecting the optic chiasm is a definite clinical entity. The chiasmal syndrome is similar to that produced by tumor in this region. A definite preoperative diagnosis of the underlying lesion cannot always be predicated. Operative results in this group justify surgical exploration.

Extraction of Cataract.—Beginning where his last report ended, Knapp has collected the next successive 100 cases of intracapsular extraction for analysis. These cases, with the exception of two in which the patients died in the hospital, are tabulated as follows: The cataracts can be grouped thus: mature, forty; nuclear and posterior cortical, twenty-seven; complicated, fifteen; hypermature, fifteen, and morgagnian, three. The cataracts were delivered in the following manner: Ninety-three tumbled, in five of which the capsules ruptured and were secondarily extracted, and in one the capsule ruptured and remained in the upper pupil; there was head presentation in three cases, and four cataracts were grasped a second time and pulled out, one capsule rupturing. The period of hospitalization is generally between fourteen and twenty-one days; in this type of operation it is well to be more careful than usual and to wait for the firm closure of the wound. As these patients were operated on between 1921 and 1925 the cases could be followed, and the visual results given are those found at the last examination. In some, the good early vision was lost through a return of the iridocyclitis or the development of a detachment in two. The visual results were: fifty-six cases, 20/20; eighteen, 20/30; five, 20/40; one, 20/50; six, 20/70; two, 20/100; two, 20/200; four, fingers; three, hand movement; two, light perception; one, failure. In brief, vision in seventy-four was 20/30 or better.

Paracentral Field in Early Glaucoma.—The scotomas associated with the incipient stages of glaucoma are shown by Sloan to be of such a nature that they are easily overlooked or ignored. Because they may occur as relative scotomas only and because they may be isolated from the blind spot, they are not always easily detected. When they are found, moreover, often but little importance is attributable to them. This may be due in part to the fact that they are frequently of a rather transient nature, and their presence cannot always be verified when a second test is made at a later date. It is probably largely due, however, to the fact that they may occur when no confirmatory symptoms are present to support the diagnosis of incipient glaucoma. In such cases a test of the effectiveness of pilocarpine in reducing the area of the scotoma, as advocated by Samojloff, is suggested as a means of obtaining supplementary evidence. The value of an early diagnosis in the successful treatment for glaucoma is generally recognized. It should be emphasized also that the possibility offered by early diagnosis for studying the disease in its incipient stages is an important adjunct to the investigation of its underlying causes. The characteristics of the scotomas found to occur in incipient glaucoma and the changes produced in these scotomas when pilocarpine is instilled into the eye are reported with the hope that this information may aid in the early diagnosis of glaucoma.

New Operative Procedure in Glaucoma.—Swett resorts to operation in glaucoma if the continued and reasonable use of miotics fails to keep the tension within normal limits and

the visual fields in check. The usual question of whether an iridectomy or a trephine is the operation of choice led him to review his own results to ascertain which method was giving the most permanent relief. He was surprised to find that a great percentage of his successful cases showed fragments of iris tissue in the cicatrix. This incarceration of the iris was also found in cases of so-called cystoid scar, which, incidentally, give satisfactory and lasting results. These observations led him to the supposition that the success of these operations was due to the iris tissue present in the healed scar. Following this logic he purposely incarcerated strips of iris tissue in the next two iridectomy cases and was elated at the results. In both cases there developed small discrete blebs like those seen in a successful trephining. Since this time he has varied the technic merely to improve and to standardize the procedure. A conjunctival flap is made above, but not dissected free down to the limbus. The incision into the anterior chamber is usually made with a keratome, but if the chamber is shallow a Graefe knife is used, the incision being about 6 mm. in length. A moderate-sized iridectomy is then performed with de Wecker scissors and the section of tissue of the iris removed is floated out on physiologic solution of sodium chloride. A small section of tissue of the iris is picked up on a repositor; it is inserted into the anterior chamber and by a sweeping motion is placed in the sharp angle of the incision, where it is firmly gripped as the edges of the wound come together. The conjunctival flap is smoothed into place, and the eye is dressed. The fragment of iris is firmly held in the angle of the incision. The author has never experienced any difficulty in its becoming dislodged.

Archives of Surgery, Chicago

22: 527-690 (April) 1931

*Intervertebral Disk Extensions into Vertebral Bodies and Spinal Cord. D. Sashin, New York.—p. 527.
*Atrophy and Fibrosis Associated with Lymphoid Tissue in Thyroid: Struma Lymphomatosa (Hashimoto). A. Graham and E. P. McCullagh, Cleveland.—p. 548.
*Carcinoid Tumors of Small Intestine. H. H. Cooke, Rochester, Minn. —p. 568.
*Experimental Shock: Probable Cause for Reduction in Blood Pressure Following Mild Trauma to an Extremity. A. Blalock, Nashville, Tenn. —p. 598.
*Id.: Importance of Local Loss of Fluid in Production of Low Blood Pressure After Burns. A. Blalock, Nashville, Tenn.—p. 610.
*Id.: Composition of Fluid that Escapes from Blood Stream After Mild Trauma to an Extremity, After Trauma to Intestines and After Burns. J. W. Beard and A. Blalock, Nashville, Tenn.—p. 617.
*Id.: Study of Effects of Loss of Whole Blood, of Blood Plasma and of Red Blood Cells. G. S. Johnson and A. Blalock, Nashville, Tenn. —p. 626.
*Id.: Observations on Water Content of Tissues of Body After Trauma and After Hemorrhage. P. N. Harris and A. Blalock, Nashville, Tenn.—p. 638.
*Absorption of Dextrose from Colon: Study of Effects of Chemical Excitants and of Stimulants on Dextrose Enema. R. W. McNealy, Chicago, and J. D. Willems, Seattle.—p. 649.
Correlation of Function with Cause of Death Following Experimental Intestinal Obstruction at Varying Levels. O. H. Wangensteen and N. L. Leven, Minneapolis.—p. 658.
Review of Urologic Surgery. A. J. Scholl, Los Angeles; E. S. Judd, Rochester, Minn.; L. D. Keyser, Roanoke, Va.; G. S. Foulds, Toronto; J. Verbrugge, Antwerp, Belgium, and A. A. Kutzmann, Los Angeles.—p. 666.

Intervertebral Disk.—According to Sashin, intervertebral disk extensions or cartilage nodes are pathologic conditions of the spine. They are expansions of the elastic intervertebral disk substance into the adjacent bodies or into the spinal canal. In nine cases reported by him, trauma and degenerative or arthritic changes of the cartilaginous plate were the most important etiologic factors. Roentgenographically, the disk extensions are seen as small areas of lessened density, or small defects in the cortical plate and spongiosa. Traumatic disk extensions into the adjacent vertebral bodies give rise to clinical signs and symptoms. In other cases, symptoms arise only when a considerable area of the bodies is involved. Intervertebral disk extensions into the spinal cord occur and may produce compression of the spinal cord.

Atrophy and Fibrosis Associated with Lymphoid Tissue in Thyroid.—Graham and McCullagh believe that, pending the accumulation of further data, it seems not unreasonable to expect that the clinical recognition of struma lymphomatosa (Hashimoto) will increase if the striking peculiaritis of the lesion are borne in mind. These may be summarized briefly as follows: (1) uniform bilateral firm or hard enlargement of the thyroid without notable deformity of the lobes and without definite nodules, (2) close attachment to the trachea without adherence to overlying structures, (3) occurrence in women in middle life or later, (4) absence of symptoms other than those that may be ascribed to moderate compression of the trachea, (5) absence of involvement of regional lymph nodes or evidence of distant metastases, (6) absence of impairment of the general health and (7) absence of signs of local inflammation.

Carcinoid Tumors of Intestine.—Cooke reports eleven additional cases of carcinoid tumor of the small intestine, three of which were malignant and eight of which were benign. Intestinal obstruction was caused by three of the malignant and one of the benign tumors. Five cases occurred in the seventh decade. The primary lesion was a single circumscribed nodule in seven cases, multiple nodules in three cases and an annular constriction in one case. The primary lesion was in the jejunum in two cases and in the ileum in nine cases. The size of the lesions varied from 0.2 to 2 cm. in diameter. The histologic picture of carcinoid tumors of the small intestine suggests benign tumor, but metastasis occurred in about 20 per cent of the reported cases.

Reduction in Blood Pressure Following Trauma to an Extremity.—In experiments on dogs anesthetized by barbital, Blalock studied the effects of mild trauma to one of the extremities. The time interval that elapsed between the initiation of the trauma and the amputation of the extremities varied from seventeen to seventy hours. In five experiments the average of the mean blood pressures was 108 mm. of mercury at the time of the amputation, and the average difference in weight of the two extremities amounted to 2.41 per cent of the body weight. In ten experiments the mean blood pressure was less than 70 mm. of mercury at the time of the amputation and the difference in weight of the two extremities was 3.66 per cent of the body weight. Previous experimental work indicates that the fluid that was lost was mainly the whole plasma of the blood. Reasons are given for the belief that the loss of fluids into the traumatized region was the chief if not the sole cause for the reduction in the blood pressure.

Low Blood Pressure After Burns.—Blalock determined the effects of burns on the escape of fluid into the tissue spaces of the injured area in eighteen dogs anesthetized deeply by barbital. Varying amounts of half of the body surface were burned, and the difference in weight of the two halves of the body was determined. In all instances the burned side was heavier, the average difference in weight in all experiments being 3.34 per cent of the total weight of the dog. The author discusses the important rôle that this probably exerts in the reduction of the blood pressure.

Composition of Fluid that Escapes from Blood Stream After Traumas and Burns.—Studies have been made by Beard and Blalock of the plasma of the blood and of the fluid that escaped from the blood stream at the site of the injury after mild trauma to an extremity, after trauma to the intestines and after burns. The analyses included determinations of the content of chlorides, sugar, nonprotein nitrogen and total protein. The fluid that escaped from the blood vessels of the injured area had approximately the same composition in all of these constituents as the plasma of the blood. Reasons are given for believing that the loss of plasma proteins at the site of injury is the most important factor in the production of shock caused by the experimental methods used in this study.

Effects of Loss of Whole Blood and of Red Blood Cells.—Johnson and Blalock determined the comparative effects of the removal of whole blood, of plasma and of red blood cells in thirty-five dogs anesthetized by barbital. The results indicate that the loss of whole blood is usually tolerated better than is the loss in equal amounts of either blood plasma or red blood cells. The animals withstand the removal of a slightly larger volume of red blood cells than of blood plasma. The results obtained in these experiments are compared with those reported previously on the effects of severe trauma to an extremity, mild trauma to an extremity, intestinal trauma and burns. They indicate that the cause for the reduction in the blood pressure after the various types of injury was the loss of whole blood or of plasma from the blood stream at the site of the trauma.

It does not seem necessary to assume the action of a poison which exerts a general bodily effect.

Water Content of Tissues After Trauma and Hemorrhage.—Harris and Blalock determined the content in water and solids of various tissues of the body in control experiments and in those in which a low blood pressure had been produced by trauma and burns. The animals were all anesthetized by barbital and were not given water or food during the experiments. There was little difference in the content in water or solids of the tissues in the control experiments and in those in which injury had been inflicted. In additional experiments, the content in water and solids of blood, muscle and skin was determined before and after a low blood pressure had been produced by the removal of whole blood, by the removal of blood plasma, by mild trauma to an extremity, by trauma to the intestines and by burns. The results were compared with those obtained in experiments in which the animals were simply given barbital and left on the table for periods of time varying from twenty-six to forty-seven hours. The analyses of particular importance were those on the muscles, because they contain the greater part of the water in the body. There was a larger loss of water by the muscles in the control experiments than in those in which hemorrhage or injury was studied. Reasons are given for the belief that hemorrhage and trauma are similar in that in each there is a loss of plasma proteins with a diminution in the total osmotic pressure. After trauma there is a larger proportional loss of blood plasma and hence a relatively greater diminution in the osmotic pressure. The decrease in the colloids explains the inability of the blood stream to attract more water from the tissues. The main factor that is most likely responsible for the continued low blood pressure after injuries is not a general increase in capillary permeability, with loss of fluid all over the body, but a loss of blood plasma through the walls of the damaged capillaries.

Absorption of Dextrose.—On the basis of experiments on dogs, McNealy and Willems state that a 5 per cent solution of dextrose is not absorbed from the colon to any appreciable extent. Tap water and physiologic solution of sodium chloride are rapidly and efficiently absorbed by the colon. A small amount of dextrose can be absorbed from the colon from a dextrose-saline mixture. The sodium chloride influences the absorption of the dextrose. Dextrose is not appreciably absorbed from the colon from a dextrose-sodium bicarbonate mixture. Practically no dextrose is absorbed from the colon when a dextrose-alcohol mixture is injected. The absorption of the alcohol causes a hyperglycemia in a short time. There is no evidence to show that the dextrose enema is of any practical nutritional value.

Canadian Medical Association Journal, Montreal

24: 491-618 (April) 1931

*Diagnosis of Pregnancy with Aschheim-Zondek Test. G. H. Ettinger, G. L. M. Smith and E. W. McHenry, Toronto.—p. 491.
Production of Decidual Cells in Ovary About a Primary Chorio-Epithelioma. C. Simard, Montreal.—p. 496.
*Azygos Lobe of Lung. E. H. Shannon, Toronto.—p. 498.
*Acute Mercury Poisoning: Twenty-One Cases with Suggestions for Treatment. B. I. Johnstone, Detroit.—p. 500.
Management of Placenta Praevia. P. A. McLeod, Kingston, Ont.—p. 508.
*Sugar Tolerance Curves in Acute Intoxication of Infants. T. G. H. Drake and C. E. Snelling, Toronto.—p. 511.
Diagnosis of Mastoiditis in Children. D. E. S. Wishart, Toronto.—p. 514.
Preventive Pediatrics and Its Relation to General Practitioner. A. Brown, Toronto.—p. 517.
*Late Sequelae of Abdominal Section in Presence of Infection. A. R. Munroe, Edmonton, Alta.—p. 522.
Observations on Control of Trachoma. N. B. Harman, London.—p. 524.
Correlation of Laboratory Findings with Clinical Aspects of Disease. G. Baril, Montreal.—p. 531.
Focal Infection and Its Relation to Disease. G. C. Hale, London, Ont. —p. 537.
Administration of Salicylates. G. H. W. Lucas and V. E. Henderson, Toronto.—p. 541.

Aschheim-Zondek Test.—Specimens of urine from 112 cases of suspected pregnancy and from twenty-five controls were submitted by Ettinger and collaborators to the Aschheim-Zondek test. In every case investigated the results of the test have been consistent with the subsequent clinical diagnosis. This confirms the work of several investigators as to the reliability of this test in the diagnosis of pregnancy.

Azygos Lobe of Lung.—In the course of routine roentgen examinations of the chest, extending over a period of several years, Shannon noted an abnormality in the right upper lung, on two or three occasions, which took the form of a curved linear shadow running downward and somewhat outward from the apical region to a variable distance from the lateral aspects of the vertebrae, then passing in a smooth curvature mesially and downward to about the level of the second costal cartilage. At the lower end the shadow expanded into an elongated and roughly triangular density, which varied in size from 0.5 to 3 mm. In one case the shape assumed was cylindric, the diameter being about 3 mm. over a length of about 3.5 cm. The abnormality was not associated with deviation of the trachea, such as would probably have been present had the condition been due to a substernal thyroid, nor was the appearance that of a large persisting thymus. When a second, almost identical, case was found, a diagnosis was made of aberrant course of the azygos vein. Normally, the azygos vein proceeds up the posterior mediastinum on the anterior surfaces of the vertebral bodies slightly to the right of the median line, passing over the intercostal arteries, with the thoracic aorta and thoracic duct to the left. At the fourth, or sometimes the third, thoracic vertebra it bends forward and to the right, curves over the right bronchus and right pulmonary artery, and descends slightly to open into the posterior surface of the superior vena cava. Occasionally, however, it may be displaced outward so that, instead of curving over the root of the lung, it may make a deep fissure in the upper part of the lung, marking off an extra lobe. The reflection of the parietal pleura resulting from the aberrant course of the vein as it sweeps forward and downward through the lung is responsible for the fine crescentic shadow in the apical region, the pleura being visualized by reason of an anteroposterior projection which shows it, as it were, edge on. The expanded triangular lower end of the curved line is due to a cross-sectional view of the vena azygos at its point of confluence with the superior caval vein. The size of the lobe thus demarcated may be so small as to be concealed by the great vessels. A slight obliquity in the course of the vein, or a film centered above or below it in the horizontal plane, will project its shadow as a drop-like structure, or show it as an elongated triangular or cylindric density. The anomaly must be differentiated from a substernal thyroid, a large thymus, and pleural bands. In addition, the structure may be simulated by the edge of an annular bronchiectasis at the apex, by the edge of cavities and of a spontaneous circumscribed pneumothorax.

Mercury Poisoning.—Twenty-one consecutive cases of acute mercury poisoning are reported by Johnstone and, with these as a basis, the main clinical and pathologic features of this condition are discussed. Treatment in the light of recent experimental work is outlined. In view of the fact that at present prevention of absorption is more effective than any known therapeutic measure, transduodenal irrigation and biliary drainage are suggested as additional means of achieving this result.

Sugar Tolerance in Infants.—Observations recorded by Drake and Snelling confirm those of Tisdall, Drake and Brown, who showed that in acute intestinal intoxication the ability to utilize dextrose that has been injected into the blood stream is lessened. Furthermore, the authors demonstrated that the rate at which the injected dextrose is removed from the blood stream is inversely proportional to the degree of toxemia present.

Sequelae of Abdominal Section in Presence of Infection.—Munroe states that infection in the abdomen may spread by three routes—by direct extension, by the lymphatics, and by the blood stream. Direct extension of the bacteria is most likely to take place before laparotomy has been performed, but that there are considerable possibilities of spreading the infection at the time of operation must not be lost sight of. Usually any complication due to a local extension of infection will subside once drainage is established, and pus pockets in the neighborhood of the initial lesion are most likely to drain toward the exterior. In most cases, drainage will continue through the operation wound until the abdominal cavity is clean. Extension by the lymphatics is much more likely to involve structures at some distance from the initial lesion, and the spreading by the blood stream of infective emboli which lodge anywhere in the body may initiate a secondary lesion of even greater importance than

the primary one. A few of the more important late sequelae are secondary abscess, subphrenic abscess, abscess of the liver, upper abdominal adhesions, intestinal obstruction, empyema, pulmonary embolism and incisional hernia.

Illinois Medical Journal, Oak Park

59: 241-324 (April) 1931

Undulant Fever. L. Arnold, Chicago.—p. 276.
Splinting the Lung. H. L. Horwitz and O. C. Schlack, Chicago.—p. 280.
The Job of Editing a Medical Journal. C. J. Whalen, Chicago.—p. 285.
Health Appraisal or Periodic Examination of Apparently Healthy Persons. J. M. Dodson, Chicago.—p. 291.
Pitkin's Spinal Anesthesia. A. M. Miller, Danville.—p. 300.
Obesity and Leanness. H. R. Rony, Chicago.—p. 302.
Compensation for Injuries of Eye. S. R. Gifford, Chicago.—p. 315.
Circumcision. F. C. Schurmeier, Elgin.—p. 319.
Observation of Use of Sodium-Iso-Amyl-Ethyl Barbiturate Under Trade Name of Sodium Amytal as an Anesthetic. A. E. Joslyn, Maywood. —p. 320.

Indiana State Medical Assn. Journal, Fort Wayne

24: 185-242 (April) 1931

Infections of Kidneys and Their Management. J. D. Barney, Boston.—p. 185.
Mouth Conditions Causing Ocular Infections. J. J. Connelly, Terre Haute.—p. 190.
Medicine's Public Relations. R. V. Hoffman, South Bend.—p. 195.
Nitrous Oxide-Oxygen Anesthesia: Consideration of Some Associated Factors. E. I. McKesson, Toledo, Ohio.—p. 198.
Diet for Operative Patient. R. H. Moser, Indianapolis.—p. 203.
Effect of Emotion on Secretions: Especial Reference to Thyroid Gland. C. D. Camp, Ann Arbor, Mich.—p. 203.

Iowa State Medical Society Journal, Des Moines

21: 147-208 (April) 1931

Chronic Mastoiditis. G. C. Albright, Iowa City.—p. 156.
Aids in Diagnosis, from Ophthalmologist's Viewpoint. C. C. Walker, Des Moines.—p. 162.
Headache: Problems in Diagnosis. O. L. Thorburn, Ames.—p. 167.
Digitalis Delirium with Colored Vision: Case. H. L. Smith, Rochester, Minn.—p. 173.
Suppurative Choroiditis of Endogenous Origin. C. F. Howland, Des Moines.—p. 174.
Agranulocytic Angina. F. H. Reuling, Waterloo.—p. 177.
Four Cases of Progressive Jaundice with Necropsy Studies. F. P. McNamara, Dubuque.—p. 180.
Unattached Tumors from Embryonal Urogenital Apparatus. G. H. Hansman and J. W. Budd, Iowa City.—p. 186.

Kansas Medical Society Journal, Topeka

32: 109-144 (April) 1931

Surgical Relief of Intractable Pain in Trunk and Lower Extremities. W. D. Abbott, Des Moines, Iowa.—p. 109.
The Different Child. G. W. Robinson, Jr., and Norma K. Pooie, Kansas City, Mo.—p. 113.
Congenital Polycystic Kidney Disease. O. S. Randall, Kansas City. —p. 118.
Rupture of Uterus Following Use of High Forceps. F. Foncannon, Emporia.—p. 121.

Medical Journal and Record, New York

133: 365-416 (April 15) 1931

Future of Surgery. B. G. A. Moynihan, Leeds, England.—p. 365.
*Nutrition by Means of Duodenal Tube After Operations on Stomach. M. Flesch-Thebesius, Frankfort-on-the-Main, Germany.—p. 367.
Treatment of Chronic Arthritis. B. L. Wyatt, Tucson, Ariz.—p. 369.
Spinal Anesthesia. C. R. Steinke and H. V. Sharp, Akron, Ohio.—p. 374.
Symptom Complex of Autointoxication: Intestinal Toxemia. Esther B. Hardisty, New York.—p. 376.
Modern Conception of Deafness. H. Hays, New York.—p. 378.
For Sake of Morality. H. Benjamin, New York.—p. 380.
Seminal Vesicle and Its Diseases. W. S. Pugh, New York.—p. 383.
Résumé of Sixty-Seven Successive Cases Studied on Urologic Service of Morrisania City Hospital. M. Zigler, New York.—p. 389.
Indications for Urologic Examination in Infants and Children. M. F. Campbell, New York.—p. 392.
Safe and Effective Treatment of Syphilis. G. M. Blech, Chicago.—p. 394.
Theoretical Motivation of Infectiousness of Inoculated Sperm Taken from Individuals with Latent Lues. G. Kertesz, Ujpest, Hungary.—p. 397.
Intraspinal Injections of Magnesium Sulphate for Relief of Intolerable Pain. A. Gordon, Philadelphia.—p. 399.
Some Early Spanish American Remedies: Soldier's Letter to Monardes. W. R. Riddell, Toronto.—p. 401.
Medical Observations of Marco Polo. L. L. Stanley, San Quentin, Calif. —p. 403.

Nutrition After Operations on Stomach.—Flesch-Thebesius introduces a duodenal tube on the awakening of the patient from the anesthetic. When patients are thus prepared in advance it is nearly always possible to introduce the tube in the afternoon of the day of the operation and to let it lie during the following days. Immediately on introducing the tube it is possible in this way to remove the liquid from the stomach, which invariably is mixed with blood even in cases of the most careful suture methods after a stomach operation. After all liquid has been removed by means of a syringe, tea is administered by means of the tube and withdrawn until the liquid is absolutely free from blood. During this proceeding the patient can sleep and feels no effect when the tea used has the proper temperature; he is susceptible only to heat and cold. At the end of this procedure the quantity of liquid that was first withdrawn at the beginning of the process is left in the stomach. In cases of resection this amounts to from 80 to 150 cc. on an average, in cases of gastro-enterostomy of course more. The night following, these washings with tea or dextrose solution are repeated from time to time according to the thirst of the patient, for it is striking how the patient loses his thirst by this method. Intelligent patients are able to undertake these washings themselves. Since the author has made use of this process, he no longer sees patients who have undergone stomach operations in the morning lying in bed in the evening totally exhausted with a wet cloth on their foreheads, suffering from thirst. He has experienced no disadvantages from this method and especially has had no cases of harmful effect of the deposited tube on the suture. He considers the duodenal tube treatment after operations on the stomach a great advantage in the postoperative treatment.

Missouri State M. Assn. Journal, St. Louis

28: 147-190 (April) 1931

Bilateral Stones in Kidney. J. R. McVay, Kansas City.—p. 147.
Nephropexy and Ureteroplasty: Observations on Method for Relief of Obstruction and Pain. C. E. Burford and J. E. Glenn, St. Louis. —p. 151.
So-Called Pyelitis. R. L. Hoffmann, Kansas City.—p. 155.
Primary Carcinoma of Liver: Case. G. Gay, Ironton.—p. 157.
Indications for Pneumothorax in Pulmonary Tuberculosis. S. H. Snider, Kansas City.—p. 159.
Early Symptoms of Pulmonary Tuberculosis: Study of 133 Patients. A. C. Henske and C. W. Ehlers, St. Louis.—p. 164.
Hypertension Associated with Hypothyroidism. O. Abel, Jr., and J. W. Thompson, St. Louis.—p. 168.

New England Journal of Medicine, Boston

204: 747-790 (April 9) 1931

Nonactivated (Apathetic) Type of Hyperthyroidism. F. H. Lahey, Boston.—p. 747.
Fracture of Tibia into Knee Joint. P. B. Swett, S. H. McPherson and M. M. Pike, Hartford, Conn.—p. 749.
Use of Barbituric Acid Derivatives in Thyroid Surgery. F. E. Barton, Jr., Boston.—p. 757.
Undulant Fever: Case. P. Dooley, Kent, Conn.—p. 759.
Rupture of Coronary Artery, Hemopericardium. C. T. Olcott, New York.—p. 760.
Diagnosis of Congenital Defects of Heart. W. D. Reid, Boston.—p. 764.
Fat Metabolism: New Procedure for Isolation and Quantitation of Total Fatty Acids in Small Amounts of Bile. C. W. McClure, Boston; Mildred E. Huntsinger, Arlington and Esther Bloomberg, Brighton. —p. 764.
Coccus Infections in and Around Kidney. J. D. Barney, Boston.—p. 770.
Epithelioma of Eyelid: Case. J. J. Corbett, Boston.—p. 774.
Draping of Patients for Vaginal Operations. C. Bearce, Boston.—p. 776.

204: 791-844 (April 16) 1931

Urticaria and Insulin Resistance with Reference to Relation of Skin to Carbohydrate Metabolism. A. Rudy, Boston.—p. 791.
Indications for Abdominal Surgery in the Infant. A. Thorndike, Jr., Boston.—p. 796.
Clinical and Laboratory Experiences with High Carbohydrate-Low Calory Diets in Treatment of Diabetes Mellitus. I. M. Rabinowitch, Montreal. —p. 799.
Malpractice Suit: Why and Wherefore. H. E. Locke, Esq., Augusta, Maine.—p. 810.

New York State Journal of Medicine, New York

31: 391-456 (April 1) 1931

*Perforated Ulcers of Stomach and Duodenum. M. Weinstein and J. P. McHugh, Long Island City.—p. 391.
*Use of Electrosurgical Scalpel in Renal Surgery. W. W. Scott, Rochester.—p. 394.
Recurrent Fibrocystic Ovaries Treated by Roentgen Ray. J. C. Potter, Rochester.—p. 401.
Place of Spas in Treatment of Chronic Disease. L. W. Gorham, Albany. —p. 402.
Mortality Factors in Thyroid Disease. F. H. Lahey, Boston.—p. 405.

*Treatment of Functional Gastro-Enterologic Disturbances. L. Pulsifer, Rochester.—p. 408.
*Prevention of Injury to Recurrent Laryngeal Nerves During Thyroidectomy. A. H. Noehren, Buffalo.—p. 410.
Lung Cancer and Lung Tuberculosis. H. T. Pessar, New York.—p. 413.

31: 457-516 (April 15) 1931

Diverticula of Esophagus. F. H. Lahey, Boston.—p. 457.
Addressing Lay Organizatons on Health Examination. C. W. Crampton, New York.—p. 463.
Use and Abuse of Phototherapy. F. T. Woodbury, New York.—p. 467.
Report of Two Chest Cases with Features of Especial Interest. M. S. Lloyd, New York.—p. 471.
Dentists and State Medicine. A. M. Simons, Chicago.—p. 473.

Ulcer of Stomach and Duodenum.—Weinstein and McHugh record an analysis of fifty cases of perforated gastric and duodenal ulcers; the youngest patient was 19 years of age, the oldest, 72. A history of indigestion was present in forty-four (88 per cent) of the cases. Spinal anesthesia seems to be the anesthetic of choice and will undoubtedly lower the immediate operative mortality. Simple closure of the perforation is the preferred procedure. If the pathologic condition of the ulcer becomes progressive, a secondary gastro-enterostomy operation or more radical surgery may be attempted later. At the primary operation, one should complete the amount of surgery that will occupy the minimum amount of time.

Electrosurgical Scalpel in Renal Surgery.—According to Scott the use of the electrical scalpel in operative procedures on the renal parenchyma greatly decreases the amount of hemorrhage. Because bleeding is better controlled by this method, fewer sutures are necessary and consequently there is less loss of renal function. The decrease in the amount of bleeding permits quicker and better operative work.

Functional Gastro-Enterologic Disturbances.—Pulsifer states that, in general, functional gastro-intestinal disturbances are not understandingly or adequately treated. One must constantly watch for organic disease, but the patient should not be allowed to feel uncertainty. The mental status of the patient should be studied and emotional stress relieved wherever possible. Reinforcement should be given in the form of suggestion and symptomatic relief. The manner of living, eating and diet, and bowel management should be adjusted according to common sense standards. Cathartics and irrigations should be avoided. The patient should be followed and a general plan of treatment persisted in. Improvement is the rule.

Laryngeal Nerves in Thyroidectomy.—In addition to the many safeguards already described and carried out in the technic of thyroidectomy to prevent injury to the recurrent laryngeal nerves, Noehren adds the following: 1. The postero-internal portion of the thyroid lobe left behind in thyroidectomy should not be disturbed by folding the raw surface over on itself. This is not necessary in most cases and is apt to compress the nerve. Removal of the second lobe in thyroidectomy should not be undertaken until one is convinced that the nerve on the opposite side has not been injured by removal of the first lobe.

Ohio State Medical Journal, Columbus

27: 265-344 (April) 1931

Peptic Ulcer. G. W. Crile, Cleveland.—p. 285.
What Constitutes Conservatism in Surgery of Plural Infections of Nasal Accessory Cavities? J. E. Brown, Columbus.—p. 287.
Albumin Relation in Spinal Fluid. L. A. Miller, Toledo.—p. 291.
Critique of More Recent Work in Tuberculosis as it Relates to Diagnosis and Prognosis. C. A. Doan, Columbus.—p. 292.
Pellagra in Ohio: Fourteen Cases in Dayton During 1928-1929. M. T. Hoerner, Dayton.—p. 296.

Oklahoma State Medical Assn. Journal, Muskogee

24: 101-140 (April) 1931

Plea for Early Treatment for Cross Eyes. C. B. Barker, Guthrie.—p. 101.
Etiology and Pathogenesis of Acute Diffuse Glomerular Nephritis. E. R. Denny, Tulsa.—p. 104.
Intravenous Urography. J. Fulcher, Tulsa.—p. 106.
Nephropathies. H. Jeter, Oklahoma City.—p. 109.
Significance of Laboratory Tests in Diagnosis and Treatment of Syphilis. M. O. Nelson, Tulsa.—p. 112.
Hereditary Syphilis. C. M. Pounders, Oklahoma City.—p. 117.
Diagnosis and Treatment of Nonspecific Prostatitis. S. D. Neely, Muskogee.—p. 118.
Local Anesthesia in Treatment of Fractures. E. E. Rice, Shawnee.—p. 122.
Spinal and Splanchnic Anesthesia in Relief of Intestinal Obstruction: Three Cases. B. W. Ward, Tulsa.—p. 123.

Pennsylvania Medical Journal, Harrisburg

34: 463-534 (April) 1931

Evaluation of Radium and Roentgen Rays in Treatment of Advanced Cancer. B. P. Widmann, Philadelphia.—p. 463.
Personal and Practical Experiences with Neoplasms About the Head and Neck with Especial Reference to Ear, Nose and Throat. J. C. Beck, Chicago.—p. 467.
Prevention of Coronary Occlusion. W. D. Stroud, Philadelphia.—p. 469.
Clinical Evaluation of Circulatory Efficiency. A. B. Thomas, Pittsburgh.—p. 473.
Diagnosis of Early Circulatory Insufficiency. H. B. Anderson, Johnstown.—p. 475.
Removal of Nonmagnetic Foreign Bodies from Vitreous. G. H. Cross, Chester.—p. 478.
Is There an Ideal Infant Food? A. E. Siegel, Philadelphia.—p. 482.
Combined Bactericidal and Antirachitic Effects Induced in Milk by Carbon Arc Irradiation: Peculiar Effects of Combination of a Particular Film Flow Condition Combined with Irradiation of a Particular Character. B. O'Brien, A. G. Davis and E. L. Armstrong, Erie.—p. 485.
Roentgen Study of Bone Lesions in Infantile Scurvy. R. S. Bromer, Philadelphia.—p. 491.
Management of Pyloric Obstruction in Infancy: Especial Reference to Remedial Agents. H. Lowenburg, Philadelphia.—p. 494.

Philippine Journal of Science, Manila

44: 369-487 (April) 1931

New or Noteworthy Philippine Orchids. O. Ames and E. Quisumbing.—p. 369.
Anomalous Stem Structure in Archangelisia Flava and Anamirta Cocculus From the Philippines. J. K. Santos.—p. 385.
Isolation of Anonaine from Anona Squamosa Linnaeus. F. R. Reyes and A. C. Santos.—p. 409.
Automatic Vacuum Pressure Regulator. H. I. Cole.—p. 411.
Trematode Parasites of Philippine Vertebrates, III: Flukes from Fish and Reptiles. M. A. Tubangui.—p. 417.
Barbirostris-Hyrcanus Group of Philippine Anopheles. F. E. Baisas.—p. 425.

Porto Rico J. Pub. Health & Trop. Med., San Juan

6: 263-370 (March) 1931

Filarial Periodicity: Observations on Mechanism of Migration of Microfilariae from Parent Worm to Blood Stream. F. W. O'Connor.—p. 263.
Final Report on Rat-Flea Survey of City of San Juan, Porto Rico. A. L. Carrión.—p. 273.
School of Tropical Medicine of University of Porto Rico Under Auspices of Columbia University: Review of Research During Fourth Year. E. B. McKinley.—p. 283.
Study of Lobar Pneumonia in Porto Rico. R. M. Suárez.—p. 294.
Relation of Monilia Psilosis to Tropical Sprue and Evaluation of Fermentation of Sugar as Criterion for Specificity. B. K. Ashford.—p. 310.
Report of Pathology Department of School of Tropical Medicine for Period Beginning April 15, 1929, and Ending June 30, 1930. E. Koppisch.—p. 334.
Effect of Feeding Raw and Cooked Tubers. D. H. Cook and T. Rivera.—p. 341.

Public Health Reports, Washington, D. C.

46: 765-841 (April 3) 1931

Preliminary Report of Committee on Milk Production and Control. H. S. Cumming and H. A. Whittaker.—p. 769.

46: 843-894 (April 10) 1931

Psittacosis Outbreak in Maryland, December, 1929, and January, 1930. V. L. Ellicott and C. H. Halliday.—p. 843.
*Influence on Epilepsy of Diet Low in Pellagra Preventive Factor. N. P. Walker and G. A. Wheeler.—p. 851.

Influence of Diet on Epilepsy.—Walker and Wheeler report the case of an epileptic woman in whom convulsive seizures disappeared when she developed pellagra. Since pellagra can be readily produced by simply restricting the antipellagric vitamin in the diet for a few months and, when once established, can be readily cured, at least in the early stage, by the administration of yeast or by a change in diet, it was decided to check this result by placing a suitable number of epileptic persons on a diet low in this factor but otherwise well balanced. Considering the extremely poor prognosis offered by epileptic patients and the possibility that it might eventually lead to something that would help to alleviate their condition, this step seemed to be warranted. Accordingly, a group of ten women, all of whom had been diagnosed and classified as having epilepsy, were selected for study and placed on the diet. All but two showed a temporary reduction of around 50 per cent or more in the number of convulsions at about the time pellagra appeared or during its progress. One patient was permitted to have a second attack, developing late

in July following her return to the special diet, May 1. This repeated attack was accompanied by a reduction in the number of convulsions by about 30 per cent as compared with the intervening months. Of the group of ten patients, four had been under special observation for twelve months prior to the beginning of the diet and therefore afford a more extended basis for comparison. A second group of eight epileptic women placed on this diet showed the same favorable trend as was observed in the earlier group.

Rhode Island Medical Journal, Providence

14: 51-68 (April) 1931

White Blood Counts. H. E. Wellman, Providence.—p. 51.
Modern Treatment of Acute Gonorrhea. S. Sprague, Pawtucket.—p. 55.
Diagnosis of Phthisis in Adults. H. L. Barnes, Wallum Lake.—p. 58.

Southwestern Medicine, Phoenix, Ariz.

15: 97-142 (March) 1931

Ureteral Calculi: Three Cases. C. N. Ploussard, Phoenix.—p. 97.
Diseases of Cervix. M. I. Leff, Glendale.—p. 102.
Laparotrachelotomy — Its Advantages Compared to Classic Cesarean. F. B. Sharp, Phoenix.—p. 107.
Treatment of Pneumonia with Quinine. O. H. Brown, Phoenix.—p. 109.
Highlights of British Medical Association. D. Fournier, Phoenix.—p. 114.

Wisconsin Medical Journal, Madison

30: 236-321 (April) 1931

Subacute Bacterial Endocarditis. O. A. Fiedler and F. Eigenberger, Sheboygan.—p. 251.
Medical Histories and History Writing: Especial Reference to Tuberculosis. D. A. Stewart, Ninette, Manit.—p. 257.
Undulant Fever. F. J. Hirschboeck, Duluth.—p. 260.
Surgical Treatment of Pulmonary Tuberculosis. J. W. Gale, Madison. —p. 267.
Fragilitas Ossium in Twins: Case. J. N. Sisk, Madison.—p. 272.
Acromegaly, with Associated Conditions: Clinical Findings and Therapy of Case. W. H. Oatway, Jr., Madison.—p. 273.
Acute Subarachnoid Hemorrhage: Two Cases. J. A. Evans and A. D. Watts, La Crosse.—p. 279.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Bristol Medico-Chirurgical Journal

48: 1-82 (Spring) 1931

Relation of Gynecology to Glands of Internal Secretion. D. C. Rayner. —p. 1.
*Ectopic Pregnancy. R. S. Statham and H. L. Shepherd.—p. 15.
Necrosis of Myocardium. H. Rogers.—p. 35.
Congenital Heart Disease as Seen in Elementary School Children. C. B. Perry.—p. 41.
Differential Diagnosis of Primary Iritis in Early Stages. E. R. Chambers.—p. 51.

Ectopic Pregnancy.—According to Statham and Shepherd, operation is the only possible form of treatment, once the diagnosis has been made. Even if the symptoms point to a tubal abortion, it is much safer to open the abdomen immediately. Two of their cases were diagnosed as tubal abortion by competent observers and yet were found to be early tubal ruptures at operation and might have bled violently at any minute. In cases of slight bleeding it is their custom to remove the affected tube and retain the ovary when possible, and it is most important to inspect the other tube. Twin tubal pregnancy is not unduly rare, and three cases of triplets have been recorded. Also, the other tube may be so diseased as to require removal. The occurrence of an intra-uterine and tubal pregnancy at the same time is comparatively frequent. In one case in their series a second tubal pregnancy occurred in the stump of the tube removed at a previous operation for ectopic pregnancy. Four of the series had had previous tubal pregnancies on the other side. In cases of ruptured tubal pregnancy with severe bleeding immediate operation is, of course, indicated, and whenever possible a blood transfusion should be given during the operation. This has a most dramatic effect and undoubtedly saved the lives of three of their patients. Before the abdomen is opened, two Carwardine intestinal clamps are placed ready. The abdomen is opened and the hand is at once plunged down into the pelvis, and the mass of clot and tube grasped and clamped on both sides, so as to stop the bleeding. This should always be done, as furious bleeding often begins as soon as the abdomen is opened, and it is useless to try and mop it away before the clamps are applied. As it is not possible to see whether the bowel is adherent to the sac, the authors use light intestinal clamps, which do no injury to any adherent intestine that may be included in their grasp. The authors remove the clot and blood, for they think it is a peritoneal irritant and forms a nidus for sepsis. Rapidity of operation is essential, and immediate steps must be taken to combat shock. An electrically heated blanket is invaluable.

British Journal of Radiology, London

4: 97-144 (March) 1931

Radiology: Its Progress and Future. J. M. W. Morison.—p. 100.
*Tissue Culture and Its Applications to Radiologic Problems: Time and Intensity Factors in Dosage. S. F. Cox.—p. 111.
*Chronic Infections of Maxillary Antrums in Systemic Disease: Radiologic Study. G. E. Richards.—p. 120.
Roentgen Ray Generator with Water-Cooled Rotating Target. A. Müller. —p. 127.
Radiography in Hong Kong. A. J. Weston.—p. 132.

Tissue Culture and Its Applications to Radiologic Problems.—The time and intensity factors in roentgen dosage were studied by Cox by irradiating tissue cultures grown by the hanging drop method. For small doses (25, 50 and 75 r), it was found that, over the range of time and intensity employed, doses of long duration and small intensity were less effective in checking the mitotic activity than short doses of strong intensity. For large doses (3,000 to 12,000 r), the survival of the cultures subsequent to irradiation was used to determine the efficacy of the dose. A 2:1 variation of intensity had no appreciable effect on the changes induced by 3,000 r, while the same variation of intensity caused a dose of 12,000 r to be considerably more destructive at a larger intensity than at a smaller one.

Chronic Infections of Maxillary Antrums.—Richards states that infections of the maxillary antrums occur without the presence of liquid pus and a "dry tapping" may result. In some of these cases surprisingly small masses of hyperplastic tissue have been the cause of definite symptoms, which have disappeared following the removal of this infected tissue. Some of these cases contain enough hyperplastic tissue to be visible on good roentgen-ray films, but some others do not. The use of iodized poppy-seed oil has added greatly to the accuracy of the roentgen examination and is recommended in all doubtful cases. In fact, it is felt that in every case in which the antrum is punctured it would be a wise precaution to inject it with iodized poppy-seed oil and have a roentgen record.

British Medical Journal, London

1: 569-610 (April 4) 1931

*Empyema Thoracis. H. M. Davies.—p. 569.
*Efficiency of Antiseptics Used in Midwifery. L. P. Garrod.—p. 572.
*Thallium Acetate in Treatment of Ringworm of Scalp: Statistical Investigation of Subsequent Nutrition. G. H. Percival.—p. 575.
Peritonitis Due to Perforation of Bowel by Foreign Bodies. A. Hawkyard and G. Armitage.—p. 577.
*Gonococcal Complement Fixation Test. I. N. O. Price.—p. 578.
*Treatment of Carbolic Acid Poisoning. O. S. Gibbs.—p. 581.

Empyema Thoracis.—Davies states that by the time the effusion has become really purulent the pleural membranes are thickened and the lung and mediastinum are immobilized; then, for the first time, the question of open operation can be considered. This, however, does not arise in the small percentage of cases in which aspiration is succeeding in arresting the effusion and obliterating the pleural cavity, nor in the somewhat larger number in which success is attending airtight drainage. There are many cases, however, in which further treatment is needed, either because aspiration is not a sufficiently continuous method of drainage or because the catheter in suction drainage is becoming continuously plugged by lymph. The first question to decide is whether open drainage shall be through an intercostal space or by rib resection. Each procedure has its own advantages and disadvantages. The disadvantages of rib resection are that it takes slightly longer and is somewhat more of a strain for a patient who is seriously debilitated. Either operation is done under a local anesthetic; this means the anesthetization of two intercostal spaces for the rib resection and of one only for the intercostal incision. After

rib resection there is the danger of fragments of bone getting into the pleural cavity and of rib necrosis, causing delay in healing. To prevent the latter, the cut ends of the ribs should be plugged with sterile wax before they are exposed to infection. Rib resection does, however, afford adequate drainage and gives room not only for the drainage tube but also for an accessory tube alongside for irrigation. Intercostal drainage may not be possible if the ribs are too close together. Occasionally, when the tube fits tightly in the space, necrosis of a rib from pressure of the tube may occur.

Efficiency of Antiseptics in Midwifery.—Garrod tested the bactericidal and bacteriostatic action of fifteen germicides used in obstetrics, the test organism being *Streptococcus pyogenes*, and the conditions employed such as to imitate as far as possible those of obstetric use. Four of the germicides tested were calculated to be effective in the dilutions employed clinically, one, brilliant green, affording a wide margin of safety; of three the efficiency was doubtful; the remaining eight were judged to be untrustworthy.

Thallium Acetate in Treatment of Ringworm of Scalp.—Percival followed up a series of seventy-six male and female school children who received thallium acetate treatment for ringworm of the scalp at periods varying from four months to two years. Examined from several aspects, the weights and heights of both the male and the female children did not appear to show any gross deviation from the normal. In fact, below 10 years of age the figures were, if anything, slightly better than normal. Using the weights and heights observed in this investigation as standards on which to interpret physical development, and taking into account the results of a general medical examination, there is no evidence to show that the continued normal growth and nutrition of children are adversely influenced or interfered with as a result of the previous administration of thallium acetate in sufficient quantity to produce epilation of the scalp.

Gonococcal Complement Fixation Test.—According to Price, the complement fixation test for gonorrhea is as useful in the diagnosis and treatment of gonorrhea as the Wassermann reaction is in syphilis. No patient should be discharged as cured of gonorrhea unless the blood serum gives a negative complement fixation reaction. A negative result, if read in conjunction with the history and other pathologic changes (for example, smears and cultures), has a definite significance. A positive reaction is definite evidence of a present infection by the gonococcus or of an infection in the immediate past. If the test were performed on the serum of patients suffering from arthritic joints, tenosynovitis, iritis and particularly in women suffering from abdominal pain of obscure origin, fewer errors in diagnosis might be made. The test should be instituted as a routine procedure in all venereal disease clinics.

Treatment of Phenol Poisoning.—Gibbs divides the treatment of phenol poisoning into three parts. The first and most important aim is to limit absorption; secondly, to help the body to withstand the effects of the poison, and, thirdly, to assist in its elimination. It is in regard to the first and most urgent problem that he suggests a form of procedure that has the merit of simplicity. The treatment is based on the fact that phenol is much more soluble in oil than in water and thus readily leaves a watery medium for one of oil, in which it remains pharmacologically inert. It would appear to be sound treatment to apply oil freely to the site of absorption; thus, in the case of phenol burns, washing in oil followed by soaked oily dressings is a logical proceeding. When the acid has been swallowed, an immediate administration of a large quantity of oil to the stomach contents would render unabsorbable much of the acid. The most suitable substance for this purpose is ordinary medicinal liquid petrolatum, which takes up the acid efficiently and is nonabsorbable even by damaged mucous membrane; nor is it rendered absorbable by digestive processes; in this it possesses an advantage over vegetable or animal oils, which are occasionally recommended as an adjuvant treatment. The use of this oil in any corrosive poisoning is sound, because not only will it allay irritation by mechanical means but, as an unabsorbable oil, it readily assists its own elimination along with anything that may be dissolved therein. The effective dose would have to be large, at least half a pint (200 cc.), and as much more as one could induce the patient to take. Administration of the oil would not invalidate the use of the washout tube. In cases in which lavage is carried out, oil might with advantage be readministered prior to withdrawing the tube. Too much stress cannot be laid on the fact that phenol rapidly penetrates tissues, especially unprotected tissues, and that even a short delay may be enough to affect the treatment adversely. Treatment would then be continued by the use of repeated doses of magnesium sulphate.

Irish Journal of Medical Science, Dublin

63: 97-144 (March) 1931

Retrospect of Laryngotology. R. Woods.—p. 98.
*Some Aspects of Splenomegaly. J. Lait.—p. 114.
*Prevalence of Diphtheria Carriers Among Dublin School Children. R. A. Q. O'Meara.—p. 125.

Some Aspects of Splenomegaly.—Lait has made exhaustive examinations of twenty pathologic spleens. He identified the presence of structures closely similar to the Gandy-Gamma nodules in two enlarged spleens classified as myelogenous leukemia and syphilis, respectively. He believes that the mycotic hypothesis of these "idiopathic splenomegalies" will arouse many objections and much criticism.

Prevalence of Diphtheria Carriers.—O'Meara estimates that in the Dublin schools there are somewhere in the neighborhood of 3,000 diphtheria bacillus carriers, of whom some 1,400 are carriers of virulent bacilli.

Journal of Oriental Medicine, Dairen

14: 21-31 (March) 1931

Function of Gallbladder. S. Miyake.—p. 21.
Variations in Temperature of Skin According to Changes in Temperature of Environment. H. Iwatake.—p. 25.
Relation Between Tuberculosis and Typhoid: Experiments on Animals. S. Shibuya.—p. 27.
Weil-Felix Reaction in Experimental Typhus in Rabbits. K. Takahashi and S. Nagata.—p. 28.
Disinfection of Vegetables and Fruits by Hot Water. M. Ommyoji.—p. 30.
Universal Chromidrosis Caused by Micrococcus Haematodes Babes: Case. Y. L. Ma and N. C. Wen.—p. 31.

Kenya and East African Medical Journal, Nairobi

7: 343-375 (March) 1931

Do Yaws and Syphilis Confer Immunity Against Each Other, and if so to What Extent? P. P. D. Connolly.—p. 345.
Cirrhosis of Liver in East African Native. F. W. Vint.—p. 349.

Practitioner, London

126: 385-480 (April) 1931

Milk. L. Moynihan.—p. 385.
Mental Treatment Act, 1930, in Relation to General Practitioner. R. Armstrong-Jones.—p. 395.
Prophylactic Treatment of Mental Disorders. J. R. Rees.—p. 406.
Nervous Breakdown. E. B. Strauss.—p. 415.
Chronic Nasal Sinusitis and Its Relation to General Medicine. P. Watson-Williams.—p. 428.
Pruritus and Eczema of Anus and Vulva. A. Savill.—p. 440.
Clinical Observations on Disease as Modified by Tropical Climate. J. Kirk.—p. 455.
Some Lesser Known Uses of Magnesium Sulphate. F. G. Cawston.—p. 466.

National Medical Journal of China, Peiping

17: 1-166 (Feb.) 1931

Air Insufflation Into Anterior Chamber. L. Sallmann.—p. 6.
Ocular Neoplasms Among Chinese. W. P. Ling.—p. 18.
Chinese Test Cards for Near Vision. I. John.—p. 58.
Relative Value of Miotics and Mydriatics Applied in Form of Solutions and Ointments. S. M. Kiang.—p. 67.
Further Observations on Tattooing Cornea with Gold Chloride: Knapp's Method. P. S. Soudakoff.—p. 75.
Contribution to Radium Treatment in Ophthalmology (Corneal Fistula and Retinitis Proliferans). S. P. Chang.—p. 81.
Fatty Degeneration of Anterior Segment of Eyeball (Xanthomatosis Bulbi). P. Soudakoff.—p. 86.
Hydrophthalmos in Relation to Nevus. H. T. Pi.—p. 95.
Chancre of Retrotarsal Fold. T. K. T'ang and C. K. Hu.—p. 106.
Blood Vessel Formation in Vitreous in Cases of Retinitis Proliferans. T. H. P'an.—p. 110.
Injury of Cornea Caused by Chinese Native Gunpowder. H. G. Kung.—p. 115.
Western Ophthalmology in China. H. T. Pi.—p. 120.
Résumé of an Ancient Chinese Treatise on Ophthalmology. H. T. Pi.—p. 131.

Archives des Maladies du Cœur, etc., Paris

24: 65-144 (Feb.) 1931

*Amount of Blood in Pernicious Anemia. J. Brumlik and S. Janousek. —p. 65.
Complete and Permanent Juvenile Auriculoventricular Dissociation. D. Simici, I. Dumitru and M. Popesco.—p. 94.
Infant Heart Dimensions. P. Perrin and J. Mathevet.—p. 106.

Amount of Blood in Pernicious Anemia: Fourteen Cases.—To determine the exact amount of blood in a pernicious anemia case, Brumlik and Janousek employed as an indicator the volume of carbon dioxide fixed by hemoglobin in a known amount of blood, discounting in advance the known amount of gas the person inspires. Their conclusions are as follows: The diminished volume of blood is a consequence of the pernicious anemia picture which develops in line with the diminution of the number of erythrocytes, the decrease of the percentage of hemoglobin, the elevation in the number of blood corpuscles, the diminution of the volume of the blood corpuscles and the morphologic alterations of the erythrocytes and leukocytes. As with liver treatment one can reach a condition in which all the pathologic signs will disappear and one will recognize a normal blood picture in a cured case of pernicious anemia, the same route of treatment is suggested to return the blood volume to the normal. All the qualities of the blood never return to normal at the same time on account of such factors as different stages of the disease, individual reactions and especially the method of treatment used. The simultaneous determination of the blood volume and the volume of the erythrocytes indicates that the increase in the blood volume is caused in most of the cases by an increase in the volume of the red blood corpuscles, in the course of liver treatment, but sometimes also by an increase in the plasma. In other cases the blood volume does not change while the composition of the blood is improving; in other words, the number of red blood corpuscles increases at the same time as the plasma diminishes and as a result the total blood volume remains unchanged. Cases of grave pernicious anemia present likewise a very low capacity of oxygen in the total blood, but in these cases this blood peculiarity also gets corrected with the disappearance of the other morbid signs. The blood volume in the secondary anemia cases gives almost normal figures. The authors never found in these cases the low figures of the pernicious anemia in the time of its full evolution. In all cases of secondary anemia the figures of the blood corpuscle volume were diminished; i. e., the rather elevated blood volume remains maintained during the augmentation of the blood plasma. Two cases of achlorhydric chlorosis studied by the authors demonstrate the low figures of the total blood volume which almost correspond with the much lower figures of the pernicious anemias. In spite of that there exists a capital difference between these two categories: the nontreated cases of pernicious anemia present at the same time a diminished number and volume of red blood corpuscles, while, concerning the figure of the volume of blood corpuscles, the composition of blood in the anhydrochloric anemias stays normal.

Revue Française de Gynécologie et d'Obst., Paris

26: 65-128 (Feb.) 1931

*Aschheim-Zondek Reaction: New Method of Application. R. Bourg.—p. 65.

Aschheim-Zondek Reaction: New Method of Application.—Bourg introduces a new technic in this line, based on his extensive histologic researches. From the same litter two immature rats aged from 28 to 40 days, weighing from 22 to 40 Gm., one female and the other male, are taken usually for the experiment. The animals are daily injected with 1 cc. of urine to be examined and at the end of the fifth day are killed. At the beginning of the experiment the author removed the urine by a catheter. Also to reduce to a minimum the complications of his method he started lately to collect the urine in two previously sterilized tubes, which after being filled are placed as rapidly as possible in the refrigerator. One such sample of urine is sufficient to serve the Aschheim-Zondek reaction because the peculiarity of the active substance of the urine is such that it can be conserved in the refrigerator for a long time (from ten to fifteen days). The German authors prefer to add to the urine 1 drop of tricresol, which in no way modifies the reaction, allowing at the same time a more prolonged conservation of the urine. The author does not recommend the use of aqueous solutions of the urine because they impoverish its active substances. Furthermore, he suggests the use of urine collected after some rest; the best is, of course, the morning specimen. Of 120 experimental animals, 2 died in convulsions, which phenomenon Bourg refers to some particular toxicity of the injected urine. He comes to the following conclusions: 1. The Aschheim-Zondek reaction should be applied to both male and female rats which are about a month old for purely practical reasons, because rats are more certain, more constant and more resistant material than mice. 2. Macroscopically this reaction is characterized in the rats by the presence of false corpora lutea and by hypertrophy of the seminal vesicles. 3. The male rat is more sensitive than the female; it is the male that gives the reaction its most positive sign. He permits a definite macroscopic diagnosis (while in the female a doubtful diagnosis is not rare and in many instances it requires a series of microscopic examinations of the ovaries). 4. The results obtained by this procedure in pregnant as well as in nonpregnant females can be considered as exact. 5. The test must be applied to all cases when there is any doubt after making the diagnosis of pregnancy clinically.

Chirurgia degli Organi di Movimento, Bologna

15: 497-604 (Feb.) 1931

Osteosarcoma of Humerus: Resection of Diaphysis and Tibial Transplant. G. Forni.—p. 497.
*Systemic Arborescent Lipoma of Tendon Sheaths of Hand and Foot. P. Valdoni.—p. 509.
Benign Tumors of Tendon Sheaths. G. Scagliosi.—p. 530.
Metastatic Carcinosis (Osteoblastic Type) of Bones Due to Primary Neoplasm of Prostate: Case. D. Tartagli and A. Soli.—p. 543.
Posterior Marginal Fracture of Lower Tibial Epiphysis. L. Laureati. —p. 552.
Peculiar Modification of Cartilage Ossification in Case of Congenital Luxation Treated by Bloodless Reduction and Immobilization. E. Freund.—p. 563.
*Rare Lesion of Spine: Isolated Split in an Intervertebral Disk. R. Galli. —p. 575.
Experimental Reconstruction of Cruciate Ligaments of Knee by Means of Autoplastic Transplants of Aponeuroses and Tendons. D. Vallone. —p. 575.

Lipoma of Tendon Sheaths of Hand and Foot.—Valdoni reports his observations in a case of systemic arborescent lipoma of the tendon sheaths, a rare disorder, and describes the clinical picture. From the microscopic observations in his case and from the observations of other authors, he considers that one may assume a condition of the adipose tissue brought about by a definite stimulus. The histologic condition itself may be explained with the aid of the more recently acquired knowledge of the primary nature of adipose tissue. Although anatomic and biologic data are lacking to confirm it, the author joins in the opinion of other authors who assume that in most of these cases there is a tuberculous genesis due to attenuated bacilli.

Rare Lesion of Spine: Isolated Split in an Intervertebral Disk.—Galli reports the case of a mason, aged 29, who suffered a serious fall from scaffolding (a distance of about 7 meters). He landed on his feet in a perfectly vertical position. He felt immediately severe pains in his feet and could not walk a step, nor could he stand erect. He was promptly transported to the hospital. On the way, he noted a dull pain in the middle of his back in the region of the spine. Examination of the back at the hospital did not reveal any wound or even the slightest trace of a contusion. The os calcis of each foot was, however, found to be fractured. Several months later, after these fractures had healed, more or less, the pain in the back, which had died down to a great extent, was still elicited when the patient made a sudden movement. The movements of the trunk were, however, fairly good. A few weeks later an anteroposterior roentgenogram of the spinal column was made, the center corresponding to the region of the pain. An isolated fracture of an intervertebral disk was discovered (nearly four months after the accident). The trunk was not immobilized at the time. The roentgenogram revealed a deposit of calcareous salts about the injury. Four years later, the general condition of the patient was good. He could walk without a cane, although he bent over slightly. The objective examination of the spine revealed absence of deformity or deviation of the axis, excellent motility, and no pain on execution of various movements. A lesion of an

intervertebral disk may therefore be regarded as a benign disorder, when complicating nerve factors affecting the cord are absent, and may result in a functional restitutio ad integrum.

Clinica Ostetrica, Rome

33: 129-200 (March) 1931

*Pregnancy as Cause of Magnesium Deficiency from Point of View of Probable Influence of Magnesium on Pathogenesis of Cancer. F. Lorenzetti.—p. 129.
Peculiar Appearance of Contents of Dermoid Cyst Twisted on Its Pedicle. O. Viana.—p. 139.
Multilocular Serous Uterine Cysts, Simulating Pregnancy. G. Revoltella.—p. 143.
Pediatric Aid at Maternity of S. Giovanni Hospital in Rome. M. Faberi.—p. 150.
Treatment of Hydatid Mole. L. Molinengo.—p. 168.
Female Impotence. S. Cappellani.—p. 176.

Pregnancy as Cause of Magnesium Deficiency.—Lorenzetti, taking as his basis the views of Delbet on the influence of magnesium deficiency on the pathogenesis of cancer, thinks that it may be found that the loss of magnesium that the woman undergoes during pregnancy and the nursing period is a reason for the greater frequency of cancer in the female sex. He supports the hypothesis with important facts derived from analytic researches on the chemical composition of the fetus and the placenta in the various periods of their development, and proposes, as a prophylactic measure, a more rational diet and possibly a supplementary administration of magnesium to the gravida and to the nursing mother.

Policlinico, Rome

38: 291-326 (March 2) 1931. Practical Section

What Is the Proper Formula of So-Called Life-Saving Solution. B. Schiassi.—p. 291.
*Degenerative Transverse Myelitis with Subchronic Course: Case. G. Borromeo.—p. 295.

Degenerative Transverse Myelitis with Subchronic Course.—Borromeo reports a case of degenerative transverse myelitis of entirely obscure etiology. The course of the disease, contrary to what is usually expected of transverse myelitis, was not acute but subchronic, persisting several months, during which the process developed by successive thrusts. The clinical symptomatology of the case was quite similar to that of the cases reported by Foix and Alajouanine under the name of "subacute necrotic myelitis." Especially the fact that the course of the disease was protracted for several months brings the case into the same class as the cases of the French authors. The etiology and pathogenesis were entirely unknown, as is usually the case in myelitis. The interest of this case lies in the fact that a subchronic course with successive thrusts is not a sufficient criterion for excluding the diagnosis of transverse myelitis.

38: 327-362 (March 9) 1931. Practical Section

Giant Tubular Tumor of Spinal Cord. R. Monteleone.—p. 329.
*New Method of Amputation of Thigh and Arm. A. Lazzeroni.—p. 333.

New Method of Amputation of Thigh and Arm.—Lazzeroni describes a new method of amputation of the thigh and the arm, which consists in dividing the bone before the soft parts for the purpose of obtaining a more secure protection for the bone stump.

38: 363-398 (March 16) 1931. Practical Section

*Periods of Latency of Gastroduodenal Ulcer. E. Scavo.—p. 363.
Hyperemesis and Hydatid Mole, in Pregnancy. N. Muglia.—p. 369.
Aniline Poisoning from Shoe Blacking: Case. A. Mucci.—p. 372.

Periods of Latency of Gastroduodenal Ulcer.—Scavo discusses the various means of clinical research to discover whether a gastric or duodenal ulcer, at the time of disappearance of pains, is to be regarded as latent or as definitely cured. He considers more particularly researches on latent hemorrhages manifesting themselves in the feces and roentgen examinations. He concludes that the observation of latent hemorrhages is possibly the best evidence for a persistence of the anatomic process in cases clinically cured. It is well, however, to supplement this research by repeated roentgen examinations.

38: 399-434 (March 23) 1931. Practical Section

*Fracture of Axis Without Spinal Cord Symptoms. C. Angelescu and G. Buzoianu.—p. 399.
Practical Method of Hemoculture in Typhoid Infections. R. Grasso.—p. 403.

Fracture of Axis Without Spinal Cord Symptoms.—Angelescu and Buzoianu report their personal observations in a case of fracture of the axis which did not cause spinal cord symptoms but which was followed by sudden death. They discuss the mechanism of the lesion and advise in such cases roentgenography and rigorous immobilization.

38: 435-470 (March 30) 1931. Practical Section

*Graham Steele Murmur in Mitral Stenosis. D. Ceccarelli.—p. 435.
Treatment of Typhoid with Barium Chloride. E. Petrina and Campione.—p. 437.
Treatment of Estivo-Autumnal Malaria. G. Izar.—p. 440.

Graham Steele Murmur in Mitral Stenosis.—Ceccarelli, after a short discussion on the interpretation of the Graham Steele murmur, concerning which there is no common agreement, reports a case in which, in addition to a soft diastolic murmur heard in the second to third left intercostal space, near the border of the sternum, the roentgen examination revealed an evident dilatation of the pulmonary arch, which proves that this diastolic murmur—contrary to the belief of some authors—is caused by pulmonary insufficiency.

38: 109-160 (March 15) 1931. Surgical Section

Classifications and Theory of Hemangiomas and Capillary Malformations. A. Costa.—p. 109.
Traumatic Fractures of Cotyloid Cavity and Central Luxation of Femur. P. Frassineti.—p. 123.
Absorption Power of Normal and Pathologically Changed Gallbladder. P. Valdoni.—p. 140.
*Vesico-Ureteral Backflow. A. Vitale.—p. 151.

Vesico-Ureteral Backflow.—Vitale concludes from his experiments that in dogs the slow and steady injection of fluid into the bladder and the resulting slow and steady elevations of bladder pressure do not cause ureteral reflux. However, the sudden injection of fluid into the bladder and the sudden increases of pressure may cause a reflux in some cases. On the other hand, if the bladder is distended passively by an increasing volume of fluid, irrespective of the amount and degree of pressure, reflux never occurs, provided the injection is done slowly.

Archivos Españoles de Pediatría, Madrid

14: 705-768 (Dec.) 1930. Partial Index

*Pseudosyphilis of External Genitalia (Lipschütz's Type) in Female Infants. J. Gay Prieto.—p. 705.
*Syndrome of Pallor and Hyperthermia After Surgical Operations in Children. A. Llerena Benito.—p. 711.

Pseudosyphilis of External Genitalia in Female Infants.—Gay Prieto's patient, aged 7 months (a daughter of a syphilitic patient previously treated, and whose serologic reaction became negative for syphilis), presented an apparently syphilitic lesion of the vulva. Ultramicroscopic examination of the exudate from the papules and the examination of the patient's blood gave negative results for syphilis. The good results obtained with a treatment which consisted of an indifferent paste and methenamine confirmed the nonsyphilitic etiology of the exanthem in this case. The characteristics of several kinds of exanthems resembling syphilis which appear on the external genitalia in female infants are reviewed in relation to the differential diagnosis with the author's case. Especial reference is made to certain forms of lesions, such as simple forms of syphiloid posterosive dermitis, chancriform pyodermitis, pseudosyphilis of the external genitalia (similar to that type which Lipschütz described in adult women with vaginal discharge) and lichen obtusus. Owing to the aspect of the patient's lesions and to the presence of vulvitis, the author's case should be considered as pseudosyphilis of the Lipschütz type in spite of the scanty lesions in the gluteal region similar to a form of papulous infantile erythema. The author reaches the following conclusions: There is in female infants a form of condylomatous pseudosyphilis clinically similar to pseudosyphilis of the Lipschütz type. The clinical symptoms and the presence of syphiloid lesions on the external genitalia of female infants should not form the basis of a diagnosis of syphilis, unless the serologic tests and ultramicroscopic examination of the lesions confirm the clinical diagnosis. Otherwise the aspect of the lesions may lead to error in the diagnosis.

Pallor and Hyperthermia After Operations in Children.—Llerena Benito says that the syndrome of pallor and hyperthermia which some children in early infancy present

during surgical interventions may be considered as a nervous shock which disturbs the thermoregulator system. The pathogenesis of the syndrome is unknown. Several procedures which have been advised for prophylaxis and treatment have not proved effective. The author advises the avoidance of surgical operations in young children (younger than 1½ years). When the indications for operation are imperative, injections of epinephrine should precede the operation, which should be performed as rapidly as possible. When operations that require a long time to be performed are indicated, it is advisable to perform them in two stages. A case is reported of a boy, aged 3 years who, as a complication of esophagoscopy, presented the syndrome of pallor followed by a high fever and convulsions. The patient presented a serious condition but three days later he recovered spontaneously.

Deutsche medizinische Wochenschrift, Berlin

57: 481-524 (March 20) 1931

Maximal Fever Therapy in Infectious Diseases: Use of This Method in Gonorrhea. P. Mulzer and E. Keining.—p. 481.
Nervous Disturbances Following Smallpox Vaccination. H. A. Gins.—p. 485.
*New Method for Cultivation of Spirochaeta Pallida for Purpose of Active Immunization. R. Hilgermann.—p. 488.
Pathophysiology of Sympathetic Nervous System. K. Ziegler.—p. 489.
C'cn.
Statistics on Results of Extrapleural Thoracoplasty. O. Schedtler.—p. 491.
Seasickness and Its Treatment. C. Hirsch.—p. 494.
New Method for Determination of Susceptibility to Parathyroid Extract. G. Lenart.—p. 497.
Radioactive Bismuth in Tumor Therapy. A. Braunstein.—p. 497.
Fatalities Following Blood Transfusions. E. Klaften.—p. 498.
Manual Removal of Placenta. A. Weber.—p. 498.
Ureteral Calculus: Report of Own Case. Lichterfeld.—p. 499.

Cultivation of Spirochaeta Pallida for Purpose of Active Immunization.—According to Hilgermann it would be desirable to treat the sequelae of syphilis, especially dementia paralytica, with living *Spirochaeta pallida*, because this would constitute a more specific treatment than the nonspecific shock therapies, as for instance malaria inoculation. However, attempts at active immunization with spirochetes have been unsuccessful up to now not only because vaccination with living *S. pallida* cultures has frequently caused toxic reactions but also because there has been no satisfactory method of cultivation that would permit a mass culture and make it possible to continue a selected and tested stock culture through several years. It was therefore the author's aim to perfect a method that (1) would permit continuous cultivation for several years of the same selected spirochete stock, which had been tested in animal experiments, and (2) would counteract the pathogenic qualities, which are detrimental for immunization purposes. A culture medium had to be found that would contain suitable nutritive substances and could be preserved with a definite oxygen deficiency. It was found that ascites fluid, pleural exudate and sterile blood were the most suitable nutritive substances. The use of animal proteins had to be disregarded because of the danger of anaphylaxis. As the most suitable reducing substance the author chose yellow phosphorus. It does not dissolve but effects oxygen deprivation merely by its presence. The vapors that it forms over the culture medium protect the culture against the oxygen in the air, when the culture is opened. The addition of yellow phosphorus also stimulates the mass development of the spirochetes and facilitates the production of pure cultures by excluding the accompanying bacteria. The author has 3 year old cultures that still contain living spirochetes, which, when brought into new culture mediums, immediately continue their growth. This shows that the disintegration products of the spirochetes have no toxic effects on the growth capacity of the surviving spirochetes. For his culture experiments the author employed *S. pallida* stock the original cultures of which had been obtained from primary lesions in direct culture in serum agar over rabbit kidney. The simultaneous testing of these stocks in the animal experiment revealed the typical manifestation of experimental animal syphilis. Hilgermann asserts that his culture method makes it possible to attempt active and specific immunization in the sequelae of syphilis. The culture suspensions contain besides spirochetes also their excretory and decomposition products. Vaccination of patients with dementia paralytica proved that the cultures did not cause complications. The therapeutic experiments with this method are not yet concluded.

Klinische Wochenschrift, Berlin

10: 433-480 (March 7) 1931

Statistics on Hypertension, Cardiac Hypertrophy, Renal Arteriosclerosis and Cerebral Hemorrhage on Basis of Anatomic Observations. G. Herxheimer and K. Schulz.—p. 433.
*Insular Diabetes and Diabetes with Insulin Resistance. W. Falta and R. Boller.—p. 438.
Wounds, Gas Gangrene and Secondary Shock. A. I. Kendall and E. Gebauer-Fuelnegg.—p. 443.
Influence of Phlorhizin on Secretion of Pancreas. L. Dünner and H. Blume.—p. 445.
Aspects of Hemophilia. A. von Domarus.—p. 446.
Gas Bubble Theory of Carbon Dioxide Baths. S. Hediger.—p. 450.
Experiments on Local Skin Reactivity with Gonococci Culture Filtrates. A. Cohn.—p. 452.
Liver and Iron Therapy in Anemia. G. Pfeiffer.—p. 453.
Occurrence of Minute Quantities of Mercury in Urine and in Feces. A. Stock.—p. 454.

Insular Diabetes and Diabetes with Insulin Resistance.—Falta and Boller describe the clinical histories of several diabetic patients. These reports indicate that there are two types of hyperglycemic diabetes mellitus, which react far differently to the administration of insulin. In the first type the diabetic disorder of the metabolism, even if severe, can be compensated by a relatively small amount of insulin, but the slightest overdosage leads to hypoglycemia, a small minus in the insulin medication leads to sugar in the urine, and the omission of insulin therapy has the effect that the diabetic disturbance of the metabolism becomes manifest with its complete intensity. This type of diabetes mellitus has the characteristic of a deficiency disease of the insular organ and can be compensated by substitution therapy. The second, the insulin resistant type, appears in two forms. Both forms have in common that the dose of insulin which is required to make the patient sugar-free is much larger than the severity of the metabolic disturbance, measured on the sugar elimination during a standard diet, warrants. This dose is sometimes several times as large as in the severest cases of the deficiency type. In the first form of insulin resistance, decrease in the insulin dose is often followed by elimination of sugar and increase leads to hypoglycemia. This form is often observed in cases of diabetes that are complicated by infectious processes; however, it also occurs in noninfectious cases, for instance during the stage of psychic excitation. In the second form of insulin resistance, enormous doses of insulin do not produce hypoglycemia and, when insulin administration is suddenly discontinued, either the elimination of sugar is slight or entirely absent and subsequent return to large doses does not produce hypoglycemia. Whether the second form develops from the first or whether the two forms have the same pathogenesis cannot as yet be decided. At any rate, not all cases of diabetes can be explained as the result of an insufficiency of the islands of Langerhans. The insulin resistant type of diabetes must be caused by yet another metabolic disturbance.

Medizinische Klinik, Berlin

27: 343-380 (March 6) 1931

*Diagnosis of Hydatid Mole. L. Nürnberger.—p. 343.
Disposal of Large Quantities of Water Administered Within Short Time. F. Reiche.—p. 347.
Chondrodystrophic Dwarfs in Novelistic Literature. R. Kienböck.—p. 350.
Paralysis of Oculomotorius with Cyclic Innervation of Medial Rectus Muscles of Eye. R. Stein.—p. 350.
Pulmonary Disturbances and Paratyphoid B Bacillus. B. Edinger.—p. 352.
Paradental Focal Infection and Intoxication. E. Leschke.—p. 356.
*Death or Apparent Death from Pulmonary Embolism. Bieling.—p. 357.
Influence of Sun Spots and of Volcanic Eruptions on Climate. F. Kerner-Marilaun.—p. 358.
Action of Hormone of Parathyroids by Way of Gastro-Intestinal Tract. G. Peritz.—p. 359.

Diagnosis of Hydatid Mole.—Nürnberger points out that a direct diagnosis of a hydatid mole on the basis of a discharge of vesicles is only rarely possible. Formerly most cases were recognized by the following symptoms: abnormal size of the uterus in comparison to the short duration of the pregnancy, peculiar partial contractions of the uterine wall, atypical uterine

hemorrhages, absence of fetal movements and of fetal body, albumin in the urine and edema of the lower portion of the body. Recently a new symptom has been discovered, which is of the greatest diagnostic significance; namely, the pathologically increased elimination in the urine of the hormone of the anterior lobe of the hypophysis. As soon as signs appear which make the existence of a hydatid mole or of a chorio-epithelioma possible, titration of the urine according to Zondek's method should be done. If the morning urine contains more than 50,000 mouse units per liter, pathologic changes of the placenta are probable, but in case of over 200,000 mouse units, hydatid mole or chorio-epithelioma exists. After removal of the hydatid mole, the urine should be examined from time to time. If the reaction remains positive, then either parts of the hydatid mole have been retained or chorio-epithelioma is present.

Death or Apparent Death from Pulmonary Embolism.—Bieling criticizes the fatalistic resignation in cases of pulmonary embolism. He points out that the cessation of the pulse and of respiration is characteristic for apparent death as well as for death, and he cites three factors which make it appear probable that the immediate result of pulmonary embolism is only apparent death: 1. The manifestations present the aspects of shock rather than of suffocation. 2. The excluded portion of the lung is usually not larger than in case of extensive exudates, in pneumothorax or in pneumonia. 3. It has been reported that successful embolectomies according to Trendelenburg's method have been performed immediately after death. The author stresses that, as long as there is a shadow of hope, therapeutic measures should not be discontinued. These are embolectomy and artificial respiration, eventually the latter alone. If the patient is in a clinic, embolectomy should be done as soon as possible; if after that pulse and respiration do not set in again, all measures for resuscitation (pulmotor, heart massage and cardiac stimulants) should be employed. At any rate, artificial respiration should be continued until definite signs of death appear. The author cites two cases in which resuscitation was successful after six hours. He thinks that the efforts are repaid even if only a small percentage of the patients can be saved; in case of failure, no harm is done.

Monatsschrift f. Geburtshülfe u. Gynäkologie, Berlin

87: 347-504 (March) 1931

Bicornular Follicles. O. Frankl.—p. 347.
*Thrombosis and Embolism Studied on Cases in Breslau University Women's Clinic in the Years 1920 to 1930. Gertrude Schmidt.—p. 352.
Thrombosis and Embolism: Observations in Women's Department of the Allerheiligen Hospital in Breslau. F. Liebig.—p. 374.
Genesis of Adenomyosis. J. Schereschewsky.—p. 389.
*Basal Metabolism in Fibromyomas of Uterus. A. M. Agaronow.—p. 398.
Obstetrics Among Indians in Tropical Bolivia. U. von Riet.—p. 407.
Definition of "Obvious Impossibility" in Lawsuits on Paternity. A. Hellwig.—p. 410.

Thrombosis and Embolism in Women's Clinic.—Gertrude Schmidt reports that in the women's clinic of the university of Breslau, in the decade from 1920 to 1930, 6,114 gynecologic operations were done. In 134, or 2.19 per cent, of the cases thrombosis developed, and twenty-six patients, or 0.42 per cent, died of pulmonary embolism. After 10,297 confinements, which include 973 premature births and abortions, thrombosis developed in 102, or 0.98 per cent, and fatal embolism in six, or 0.05 per cent, of the cases. The author asserts that intravenous injections and advanced age are not the cause of thrombosis and of embolism but that constitutional factors, social conditions and mode of life may create a predisposition for thrombosis. In the postoperative fatalities from pulmonary embolism a poor general condition and reduced power of resistance were the decisive factors. In the prophylaxis of puerperal thrombosis, gymnastics proved helpful. Trendelenburg's operation was done in three cases, but without success. An increased incidence of puerperal thromboses and embolisms was not noticeable.

Basal Metabolism in Fibromyomas of Uterus.—Agaronow points out that some gynecologists have observed changes in the basal metabolism during disorders in the female sexual functions. Moreover, even in the regular menstrual cycle fluctuations in the basal metabolism have been observed. Other authors, however, deny a correlation between the basal metabolism and the functions of the sex glands. The majority of observations on changes in the basal metabolism were made on patients with oligomenorrhea. The author studied the basal metabolism in other gynecologic disorders in which the clinical aspects and the etiology are not yet completely understood. He determined the basal metabolism in sixty-one women with gynecologic disorders and gave especial consideration to thirty-two patients with fibromyomas of the uterus. He found that all of these thirty-two patients had an abnormal basal metabolism. The majority of patients who had not yet reached the age of 40 and who still had a normal menstrual function showed an increase in the basal metabolic rate. Many of the patients who were past 40, and whose menstrual function had the characteristics of the premenopausal age, had a decreased basal metabolism. The decrease of the basal metabolic rate in some cases of the first group, and the increase in some of the second group, occurred in those persons in whom the tissues of the tumor showed degenerative changes. It was also noted that myomas of the uterus have no immediate influence on the basal metabolism but that the changes in the metabolic rate are a result of the action of the glands of internal secretion. On the basis of reports of other investigators and of his own observations, the author concludes that myomas of the uterus develop as the result of hyperfunctioning of the ovary. Since, without doubt, the functions of the ovaries and of the hypophysis influence the basal metabolic rate, it seems advisable in the various disorders in the genital sphere to determine the basal metabolism.

Münchener medizinische Wochenschrift, Munich

78: 391-430 (March 6) 1931

Thrombosis Problem. F. Franke.—p. 391.
*Prophylaxis of Thrombosis by Means of Thyroxin. K. Boshamer.—p. 393.
*Spontaneous Rupture of Spleen in Malariotherapy. B. Jutz and A. Jacobi.—p. 395.
Intertriginous Eczema Following Reducing Cures? H. Abelsohn.—p. 396.
Action of Synthetic Racemic Ephedrine. E. Egan.—p. 397.
*Auto-Urotherapy: Method and Therapeutic Value. K. Herz.—p. 398.
New Diathermy Electrode (Senner). W. Senner.—p. 404.
Therapeutic Application of Aconitine. H. Erdmann.—p. 404.

Prophylaxis of Thrombosis by Means of Thyroxin.—Boshamer points out that although the first reports about thyroxin in the prophylaxis of thrombosis were favorable, later reports were less enthusiastic, and his own experiences with the combined administration of thyroxin, atropine and Ringer's solution during the postoperative period were not entirely satisfactory. Careful observations convinced the author that there is a difference in the reactions of patients to thyroxin treatment. Whereas most patients react to thyroxin treatment with a greater pulse frequency, in others a parasympathicotonic hypertonia is so marked that a modification of the pulse by the thyroxin cannot be recognized. In a number of these patients there exists a certain thyroxin resistance. In these patients there is danger of thrombosis. The reaction to thyroxin, or the condition of the autonomic nervous system, which in case of an excessive parasympathicotonia must be considered as the causal factor of thrombosis, can be recognized if the pulse curve is compared with the temperature curve. If in spite of administration of thyroxin (especially in combination with atropine) the pulse curve does not cut the temperature curve but remains above, then danger of thrombosis exists. This danger can be counteracted by administration of synthetic racemic ephedrine. For an effective prophylaxis of thrombosis it is therefore of greatest significance to watch the pulse curve and eventually to regulate it by administration of synthetic racemic ephedrine. If the curve is normal, a further thyroxin treatment is not necessary.

Spontaneous Rupture of Spleen in Malariotherapy.—Jutz and Jacobi state that although traumatic ruptures of the spleen are comparatively frequent, spontaneous ruptures are extremely rare; nevertheless they have been observed in recurrent fever, in typhus, in typhoid and also in malaria. That they are extremely rare is proved by the fact that in 30,000 malaria patients only three spontaneous ruptures of the spleen have been observed. It is assumed that the spontaneous ruptures are caused by rapid and considerable swelling of the spleen. Several authorities have emphasized that in artificial malaria the swelling of the spleen is often absent. In reinfection, enlarged spleens

seem to be more frequent; however, they are seldom extremely large. In the entire literature on malariotherapy, only two cases of spontaneous rupture of the spleen have been reported. Another case of spontaneous rupture during malariotherapy was observed by the authors. They describe the clinical history of the case and emphasize that a trauma may be with certainty excluded. They consider the malaria infection as the cause of the rupture, for there were no indications for an acute stasis as the result of sudden cardiac insufficiency.

Auto-Urotherapy. — Herz reasoned that auto-urotherapy may have a favorable influence on hormone disturbances and he therefore employed it in patients with disturbances in the intermediate metabolism and in allergic diseases. With regard to the technic of auto-urotherapy, he states that he used the concentrated night urine. If it contains a considerable amount of sediments, it is filtered. To 5 cc. of the urine, 1 drop of phenol is added. The injection is made intragluteally with 0.5 cc. of the urine. If after a temporary improvement the disturbances reappear, the injection is repeated with 1 cc. In most instances two injections are sufficient. If a third injection should become necessary, 1.5 cc. should be injected. Local reactions were prevented by alcohol disinfection of the site of injection. The author employed auto-urotherapy (1) in pregnancy toxicoses, (2) in allergic conditions, especially in asthma, (3) in whooping cough, (4) in spasms and (5) in crusta lactea. In the latter condition not the infant but the mother was given auto-urotherapy. Although at the first glance these diseases might appear diverse they have one factor in common; namely, a disturbance in the hormonal equilibrium. The author does not wish to create the impression that auto-urotherapy is the method of choice in the treatment of these conditions; he only wishes to call attention to this method and to stimulate interest and further investigation.

Zeitschrift für Urologie, Leipzig

25: 161-240, 1931

*Relation Between Reaction and Bacterial Content of Urine. L. Sas and E. Szold.—p. 161.
Gonorrheal Polyarthritis. R. Chwalla.—p. 171.
Radium Treatment of Carcinoma of Prostate and of Bladder. A. Sanchiz and A. T. Huberti.—p. 196.
*Interruption of Pregnancy in Pyelitis. R. Goedecke.—p. 202.

Relation Between Reaction and Bacterial Content of Urine.—Sas and Szold investigated the following problems: 1. Is there a relation between the reaction of the urine and its qualitative bacterial content? 2. If such a relationship exists, is the reaction of the urine the cause or the result of the infection? In order to answer these questions, they made bacteriologic studies and also determined the reaction of the urine of 132 patients with infections of the uropoietic system. On the basis of their observations they reach the following conclusions: 1. Between the bacterial content and the actual reaction of the urine there exists a relation. 2. The bacterial content is primary and the reaction is secondary, if the infection in the retained urine is caused by a urea splitting micro-organism. 3. In cases in which the p_H of the urine fluctuates within physiologic values, namely, between 5.0 and 7.2, the quality of the colonizing micro-organisms is determined by the reaction of the urine. 4. It is advisable to utilize the reaction of the urine for therapeutic purposes.

Interruption of Pregnancy in Pyelitis.—Goedecke points out that, in many cases of pyelitis during pregnancy, spontaneous abortion sets in before the inflammation has progressed so far as to endanger the life of the mother, and following this the pyelitis generally disappears. With the aid of modern therapeutic measures, such as irrigation and drainage of the renal pelvis, the inflammatory process and the fever can frequently be counteracted to such an extent that the pregnancy can be carried to term. In cases of minor severity, dietary and medicinal treatments are often helpful. However, serious cases, in which both renal pelves are involved and in which the inflammatory process has spread to the kidneys, frequently do not yield to intensive treatment. In these instances general sepsis and renal insufficiency may cause the patient's death, and consequently artificial abortion is considered necessary. But some gynecologists think that in the treatment of pyelitis artificial abortion is never justified; instead, they recommend a surgical intervention on the kidney, either nephrotomy, pyelotomy or nephrectomy. The author, however, makes objections to this. He points out that if the patient's general condition has been weakened by prolonged fever and by toxins, the operative intervention is dangerous and, furthermore, following the operation, abortion may still take place. According to the author's experiences, interruption of pregnancy usually improves the gravida's condition and, if the mother's health or life is endangered, the first aim should be to save her; if this necessitates an interruption of the pregnancy, abortion should be induced before irreparable renal injuries have developed, which, after termination of the pregnancy, would still require removal of a kidney.

Zentralblatt für Chirurgie, Leipzig

58: 641-704 (March 14) 1931

Recent Experiences in Treatment of Fractures. S. Hoffheinz.—p. 642.
*Stimulation of New Bone Formation in Fractures by Means of Thyroid Preparations. E. Baumann.—p. 655.
Technic of Suction Treatment of Emphysema Following Thoracotomy. C. Atanasof.—p. 661.
Plasmocytoma of Mamma. G. Gronwald.—p. 663.
Blood Transfusion from Corpse. R. Sakajan.—p. 671.
Thread from Drainage Strand as Foreign Body in Choledochus Necessitating New Operation. G. Eichelter.—p. 674.
Two Fatalities Following Blood Transfusion. P. Weiss.—p. 676.

Stimulation of New Bone Formation in Fractures by Means of Thyroid Preparations.—Baumann noted that in a district in Switzerland bone fractures were extraordinarily slow in healing. At first he thought that perhaps the calcium deficiency of the region was the cause of this, and he therefore prescribed for patients with bone fractures a powder containing iron, phosphorus and especially calcium. Medication with this so-called bone powder was effective to a certain extent, but still the healing process was somewhat retarded and the author thought that perhaps the hypofunctioning of the thyroid, which is endemic in this region, might be a causal factor of the retardation. He therefore administered thyroid preparations and found that in these patients the callus formation was much more rapid than in those who did not receive them and that the combined administration of bone powder and of thyroid preparation proved most effective. The author has since treated 300 fractures in this manner and since 1923 has never noted a pseudarthrosis. He employed this medication also in plastic surgery of bones. With the exception of an increase in the pulse at the beginning of the treatment, complications were never observed. When an acceleration of the pulse became manifest, the dose was somewhat reduced. The author points out that in regions in which the deficiency of the thyroid functioning is less pronounced it might be advisable to give smaller doses. In contradistinction to Baetzner, who also recommended thyroid preparations for the treatment of fractures but who advised intravenous injection, the author recommends the oral administration of thyroid preparations.

Zentralblatt für Gynäkologie, Leipzig

55: 641-704 (March 14) 1931

Paroxysmal Tachycardia and Pregnancy. N. Alders.—p. 642.
Table for Calculating Duration of Pregnancy. E. Essen-Möller.—p. 645.
Inlet Forceps (Kielland) Delivery. R. Cordua.—p. 647.
*Anesthesia in Surgical Obstetrics and in Gynecology, with Especial Consideration of Chloroform. H. Hellendall.—p. 651.
*Osmotherapy and Eclampsia. H. Schmorell.—p. 654.
Intraligamentary Pregnancy. R. Costa.—p. 658.
Diagnosis of Secondary Abdominal Pregnancy. W. A. Chatunzew.—p. 660.
Technic of Operative Sterilization of Women: Temporary Tubal Sterilization According to Liepmann. P. Gornick.—p. 661.

Anesthesia in Surgical Obstetrics and in Gynecology.—Hellendall first reviews the attitude of several other obstetricians and gynecologists in regard to the various anesthetics and then explains his own point of view. His opinions are based on experiences gained in the course of twenty-four years of surgical activity and in more than 3,400 cases. He has come to the conclusion that chloroform should be avoided in all major operations, especially in laparotomies, in which he employs a combination anesthesia produced with pantopium hydrochloricum, scopolamine and ether. In minor and particularly in ambulatory interventions, he first administers morphine and thirty minutes later the anesthesia with 30 drops of ethyl chloride, from 3 to

5 Gm. of chloroform and ether. This method proved satisfactory in many cases; in only two instances did syncope develop, but it was counteracted by the administration of cardiac stimulants. He stresses that, in patients with cardiac disturbances, chloroform should not be used even in mixed anesthesia. He has made it a rule to use chloroform only in mixed anesthesia and never to administer more than 5 Gm. Because chloroform should be given only when absolutely fresh, he recommends the use of ampules containing only 5 Gm. of chloroform instead of larger containers.

Osmotherapy and Eclampsia.—Schmorell directs attention to the recent investigations on the pathogenesis and treatment of eclampsia, which indicate that a disturbance in the carbohydrate metabolism is one of the principal factors in eclampsia and that the brain, liver and kidneys are the organs that are mainly affected. On the basis of his own experience and on that of other authorities he recommends osmotherapy, that is, the intravenous injection of a hypertonic solution of dextrose, to which he adds insulin and a theophylline preparation. This treatment is suited (1) to counteract the convulsions produced by the cerebral pressure, (2) to stimulate the diuresis, and (3) to exert a favorable influence on the carbohydrate metabolism and on the liver. In regard to the concentration of the dextrose solution it is stated that some authors recommend the infusion of small quantities of a 40 per cent solution, whereas the author obtained favorable results with the slow intravenous infusion of large quantities (650 cc. in two hours) of a 12 per cent solution. In addition to this he administered 20 units of insulin, and in order to stimulate the diuresis he also gave a theophylline preparation. Complications did not develop. The author recommends the further investigation of osmotherapy. However, he does not consider it the only therapeutic measure. He also advises quick delivery and, in order to prevent overburdening of the vascular system, venesection. A spinal puncture previous to the infusion of the dextrose solution is advisable because the intravenous injection sometimes causes a slight increase in the pressure of the cerebrospinal fluid.

Kazanskiy Meditsinskiy Jurnal, Kazan

27: 1-104 (Jan.) 1931

Antigens from Spirochaeta Pallida Cultures in Serodiagnosis of Syphilis. R. R. Geltzer and E. G. Sushkova.—p. 3.
Surgical Anatomy of Suprarenals and Their Place in Chromaffin Organ Chain. A. V. Sushchevskiy.—p. 14.
*Rona-Tcheboksarov's Organ Lipases in the Infectious Diseases Clinic. B. A. Volter and V. N. Sharovskaya.—p. 18.
Classification and Nomenclature of Chronic "Rheumatic" Articular Diseases. J. Helman.—p. 23.
Auscultation in Joints. N. E. Kavetzky.—p. 33.
Transduodenal Expulsion of Tapeworms in Children. A. J. Krovitzky.—p. 37.
Rare Case of Ascariasis. A. A. Gavrilenko.—p. 39.
Examination of Heart in Surgery. V. L. Chenkin.—p. 43.
Subdiaphragmatic Abscesses and Surgical Treatment. J. L. Povolotzky.—p. 47.
Interstitial Pregnancy. J. F. Kozloff.—p. 52.
Antrotomy in Acute Mastoiditis. V. V. Gromoff.—p. 59.
Operative Treatment of Entropion. A. B. Kolenko.—p. 66.
Flat Foot and Summer Resorts. N. D. Kiptenko.—p. 69.
Toxidermia Nodosa (Erythema Nodosum) ex Usu Kalii Jodati. A. A. Stein.—p. 75.
Manoilov's Reaction in Venereal Diseases. A. Medved.—p. 83.
*Ulcus Vulvae Acutum Lipschutz-Chapin. J. A. Levin.—p. 84.

Organ Lipases in Infectious Diseases.—It has been demonstrated by many research workers that the fermentative power of animal blood and viscera has some relation to the character of the infection or intoxication they cause. Definite infections in some instances increase fermentative processes in the body and in others, on the contrary, arrest them, or they increase the activity of a ferment in some organs and decrease it in others. Volter and Sharovskaya have clearly demonstrated this phenomenon following the work of many previous investigators. By the aid of various alkaloids and other pharmacologic agents it is possible to determine from what organs lipases have been derived that are present in the blood serum of a diseased animal. In other words, following Rona's methods one can get, even during the life of an animal, a clear idea as to which of its organs have been affected and even determine the comparative intensity of the disorder. The cases observed have been of such diseases as typhus, typhoid, scarlet fever and diphtheria. The authors state that the Rona-Tcheboksarov method is a delicate way to determine the presence of fat-splitting ferments in the blood serum of animals with infections; this method accurately indicates functional disorders of different viscera (liver, suprarenals and pancreas). Further experimentation is needed. The test should prove helpful in studies of the influence of the endocrine glands on the pathology of infectious diseases.

Ulcus Vulvae Acutum.—Lipschutz-Chapin brought out, and Levin confirms their observations by his own cases, that so-called ulcus vulvae acutum is a distinct nosologic entity sharply defined clinically, pathologico-anatomically and bacteriologically. There are three forms of the disease: (1) gangrenous, which is rare; (2) venereal, encountered more often and resembling chancroid, and (3) miliary, which almost always accompanies the venereal form. The exciting agent is *Bacillus crassus*, a saprophytic microbe; it is a local disease chiefly affecting the labia minora and majora and seldom the perineum and the clitoris. It is not infectious. Most of the authors agree on the auto-infection theory: i. e., the harmless saprophytic microbe, in the presence of favorable conditions in the tissues of the female external genitalia, becomes pathogenic and provokes ulcus vulvae acutum. It is hard in many cases to differentiate it from chancroid and especially from the gangrenous ulcers of the female external genitalia. The treatment of ulcus vulvae acutum is simple; the ulcers disappear under any indifferent local treatment.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

75: 1277-1404 (March 14) 1931

Paranoia. L. Bouman.—p. 1278.
Leukoplakia and Cancer of Uterus. K. de Snoo.—p. 1286.
*Uremia Due to Deficiency of Sodium Chloride. J. G. G. Borst.—p. 1296.
Treatment of Acute Lupus Erythematosus Disseminatus with a Gold Preparation. J. J. Krijnen.—p. 1313.
Granuloma (Fungoides?) Gangraenescens. W. L. L. Carol.—p. 1319.

Uremia Due to Deficiency of Sodium Chloride.—Borst reports that in two patients, who were admitted to the clinic with a marked increase in the urinary constituents of the blood serum (3.3 and 4 Gm. per liter, respectively) and who died a short time after admission, at necropsy only slight abnormalities of the renal parenchyma were found. Both patients had lost large quantities of body fluids. One patient had had, as a result of stenosis of the duodenum, vomiting spells day after day; in the other patient, severe diarrheas were the cause of the loss of body fluids. Neither patient excreted chlorides with the urine. The sodium chloride content of the blood plasma of one patient was estimated after 28.5 Gm. of table salt was administered in the form of hypodermoclysis. It was 5.7 Gm. per liter as against a norm of from 5.91 to 6.27 Gm. per liter. In recent years, American and French investigators have described many cases of uremia in patients who, through vomiting, diarrhea or diabetic acidosis, had lost large quantities of salt (uremia due to salt deficiency). The administration of sodium chloride and increased quantities of fluids have in such cases life-saving value. In a short time the increased urinary constituents of the blood serum are brought down to norm, while large quantities of urinary substances are excreted. Uremia due to deficiency of sodium chloride is not rare but may occur in many disorders. Uremia in patients with intact kidneys may be suspected when these three factors are active: marked loss of sodium chloride, heavy loss of body fluids and increased decomposition of proteins.

Hospitalstidende, Copenhagen

74: 157-184 (Feb. 5) 1931

*Dietetics and Tuberculosis, with Especial Regard to Calcium Metabolism and to Significance of Vitamins. Stub-Christensen.—p. 157.
*Case of Adiposogenital Dystrophy with Cerebellospinal and Extrapyramidal Symptoms. E. Rud.—p. 175.
Concerning Gelatin. V. Jensen.—p. 179.

Dietetics and Tuberculosis.—Stub-Christensen ascribes his negative results in fifteen cases of pulmonary tuberculosis treated with Herrmannsdorfer's diet to the absence of salt, which caused the patients to tire of the diet. He attributes the good results attained elsewhere to the abundance of vitamins in the diet and emphasizes the importance of vitamin C in tuberculosis. In 140 patients with tuberculosis the blood calcium values were found to be between 9.7 and 12.6 mg. per hundred cubic

centimeters. Since, in general, cases with good prognosis seem to show high normal calcium values, attempts to increase the calcium value are advised.

Adiposogenital Dystrophy with Cerebellospinal and Extrapyramidal Symptoms.—Rud considers the picture in a case reported by him as due to a number of defects based on the germinal factor; i. e., trophic failures.

74: 185-210 (Feb. 12) 1931

*Acute Epidemic Encephalitis and Results. T. Hyge, P. Levison and F. Wulff.—p. 185.
*Blood Sedimentation Speed and Blood Groups (Blood Types). E. Bay-Schmith.—p. 202.

Acute Epidemic Encephalitis. — Hyge and collaborators report twenty-nine cases of acute encephalitis. Six patients died. After-examinations in the remaining patients show that twelve have various psychic and neurologic symptoms, slight after-effects appear in three, and eight are well. The last two groups are fully able to work; in the first group three cannot work, four have a lowered working ability, and five a normal or nearly normal ability.

Blood Sedimentation Speed and Blood Groups.—Bay-Schmith determined the distribution of blood types among 1,261 patients. No group-specific disposition to gynecologic disorders or to other general surgical disorders could be established. As previously also noted in Greenland, the blood sedimentation speed under pathologic conditions was found to be higher in women than in men. While the material affords no proof that the blood sedimentation speed in group 0 is higher in women than in men, certain conditions seem to point in that direction.

Norsk Magasin for Lægevidenskapen, Oslo

92: 221-324 (March) 1931

*Cultivation of Tubercle Bacilli According to Hohn. E. Svaar.—p. 221.
*Pirquet's Tuberculosis Reaction. J. Leikvam.—p. 240.
*Case of Congenital Tuberculosis. F. Harbitz and S. Kjelland-Mørdre.—p. 253.
*Intestinal Invagination with Spontaneous Recovery. R. Grønn.—p. 264.
*Treatment of Diabetes According to Bang. C. Schultz.—p. 269.

Cultivation of Tubercle Bacilli According to Hohn.—Svaar concludes that Hohn's method is a valuable supplement to the usual microscopic methods of examination and deserves especial attention in institutions without facilities for tests in animals.

Pirquet's Tuberculosis Reaction.—On the basis of his 2,500 reactions, Leikvam asserts that the positive Pirquet reaction has a marked tendency to increase, or at all events to remain stationary, during the second and the third day, and infiltrations that disappear from the first to the third day are to be considered as false or nonspecific. This false reaction occurs more often in negative reactions in children than in adults. The third day's results are somewhat more certain than the second day's. The late reactions, which do not appear till the second or the third day, or which, in order to become positive, have to be repeated (sensitization) are seen equally often among positive reactions at all ages. A sensitization probably occurs after twenty-four hours. Investigations in non-tuberculous patients with and without fever show that fever has a restraining effect on the reaction at all ages except in children up to 10 years.

Case of Congenital Tuberculosis.—Harbitz describes this case of congenital tuberculosis of the lungs and spleen in a stillborn infant born at term of a mother previously well. The possible relation of the tuberculosis to a placental infection could not be established, as the placenta was destroyed before the tuberculosis was suspected. Kjelland-Mørdre presents the clinical course in the case of the mother, who had two attacks of puerperal eclampsia and in whom signs of an acute miliary tuberculosis, of pulmonary type, soon developed. Death occurred eleven weeks after delivery. About four weeks after delivery, microscopic tubercles were found in the endometrium, and tuberculosis is thought to have been present in the placenta in connection with the miliary tuberculosis. The case confirms that fever of uncertain cause during the puerperium may be tuberculous in origin and is a reminder of the dangerous effect of pregnancy on tuberculosis. It is suggested that the tuberculosis of pregnancy may have played a part in the aggravation or outbreak of the tuberculosis.

Intestinal Invagination with Spontaneous Recovery.—In Grønn's case in a girl, aged 4, with sudden acute intestinal invagination, a necrotic segment of the colon 6 cm. long was discharged by the rectum two weeks later, after which some improvement was seen. Hospital treatment with diet and enemas was given for three weeks to relieve intestinal obstruction. Three and a half years later, marked symptoms of stenosis set in. Operation revealed a stricture in the transverse colon. Hemicolectomy, with removal of the stricture and anastomosis of the ileum and the transverse colon, was followed by recovery.

Treatment of Diabetes According to Bang. — Schultz says that this treatment gave favorable results in twelve out of sixteen diabetic persons; two were considerably improved and two were not affected by the treatment. The sooner the treatment was begun, the more quickly attained and the better was the result. Four cases are reported in detail.

Ugeskrift for Læger, Copenhagen

93: 233-262 (March 5) 1931

Accident Insurance Cases: X. Treatment of Paronychia. S. Kiær.—p. 233.
Heart Hormone: Therapeutic Administration. O. J. Nielsen.—p. 240.
*Unilateral Palmar Syphilis. H. Haxthausen.—p. 243.
*Technic for Clinical Determination of Diastase. G. S. Voigt and G. Jørgensen.—p. 245.

Unilateral Palmar Syphilis Appearing After Trauma on Traumatic Basis.—Haxthausen describes two similar cases of late syphilis without other noticeable symptoms of syphilis and provoked and changed in appearance and course by continued mechanical traumas, in the one case affecting the left, in the other the right, palm. The Wassermann reaction was positive, and antisyphilitic therapy was followed by disappearance of the lesions.

Technic for Clinical Determination of Diastase.—In the iodine-colorimetric method advocated by Voigt and Jørgensen as simple and accurate, the measure of the amount of diastase is the time required for a given quantity of the specimen under certain conditions to convert a fixed amount of starch into erythrodextrin.

93: 263-292 (March 12) 1931

Accident Insurance Cases: XI. Peritendinitis of Forearm. S. Hansen.—p. 263.
*Treatment of Cardiac Asthma and Angina Pectoris. A. Hasenfeld.—p. 265.
*Brown Pigmentation Ring in Forehead. B. Høyer and J. C. Smith.—p. 269.
Concerning Stethoscopes. H. C. Gram.—p. 274.

Treatment of Cardiac Asthma and Angina Pectoris.—Hasenfeld reviews the pathogenesis of these conditions and discusses in detail therapy and prophylaxis. He considers surgical treatment in angina pectoris too radical and confines himself to internal therapy.

Brown Pigmentation Ring in Forehead.—Høyer and Smith conclude that pigmentation in the form of a ring in the forehead (Andersen and Wernøe) is found in mental diseases of various kinds without the simultaneous occurrence of neurologic anomalies as well as in otherwise apparently normal persons, and can hardly be assumed to be an indication of mental or nervous disturbances.

93: 293-320 (March 19) 1931

Accident Insurance Cases: XII. Treatment of Traumatic Lesions of Shoulder. J. Fabricius-Møller.—p. 293.
Treatment of Cardiac Asthma and Angina Pectoris. A. Hasenfeld.—p. 300.
Application of Nupercaine in Dermatology. V. Genner.—p. 305.
*Case of Anthrax in Man. C. Rasch.—p. 307.

Case of Anthrax in Man.—Rasch reports the case of a man on whose hands two lesions developed after he had handled a cow with anthrax. A scraping made under the crust on the larger plaque, when stained with methylthionine chloride, revealed numerous typical anthrax bacilli. This result is almost always obtainable, he says, if examination of untreated primary anthrax is made during the first three days. Treatment with 0.75 Gm. of neoarsphenamine three times daily, at intervals of from three to five days, together with hot local applications, was followed by rapid recovery.